



DIO3-cPCI-CC

DSP-Based Input/Output Module

I/O & Communications

Features

3U cPCI Conduction Cooled

PMC Mezzanine

- Supports a conduction cooled PMC module
- 32-bit 33 MHz

Inputs/Outputs

- 32 0 to 28 Volt Discrete Inputs
- 4 Analog Frequency Inputs
- 11 High-Level Single Ended Analog Inputs
- 28 Low-Level Differential Analog Inputs
- 6 DC Programmable Analog Outputs -10 to +10 Volt
- 4 Excitation Outputs \pm 10 Volt
- 2 frequency gear sensor Inputs

I/O Controller

- Altera 1K series FPGA with embedded IP PCI core for main processor communications

Voltage Monitor

- 8-Channel, 10-Bit ADC for monitoring power supply secondary voltages

cPCI Interface

- Conforms to PICMG 2.0 R2.1 for a Target board

Memory Area

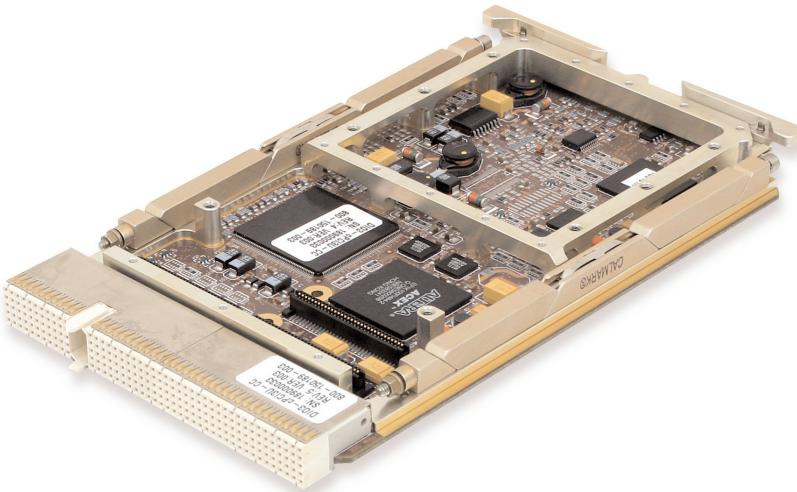
- 128 k Words of SRAM and
256 k Words of Flash memory

Versatile Microprocessor

- Texas Instruments TMS5402
- Microcode-based design for flexible support of unique protocols

Software Programming

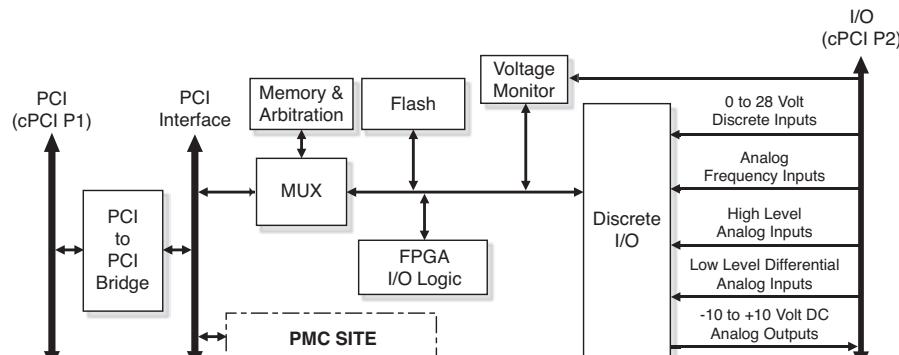
- DSP and FPGA configuration data stored in Flash memory



DIO3-cPCI-CC provides a highly versatile interface between the cPCI bus and DSP-Based inputs and outputs. Typical signal handling capabilities include Discrete Ground/Open outputs, Analog inputs, Gear Sensor inputs, and TTL level inputs and outputs. For added versatility, the card also includes a PCI Mezzanine Card Interface (PMC site). The ability to handle a wide variety of signals, perform on-the-fly signal processing, together with its conduction cooled temperature range makes the DIO3-cPCI-CC ideal for use in mission computers and other applications with harsh environmental demands.

DSP program code and FPGA configuration data can be downloaded and stored in FLASH memory via the host processor of the cPCI bus, allowing the card to combine the functionality of several individual speciality cards, saving precious backplane slots and the additional power, weight, and cooling requirements associated with those extra slots.

Signals move between the P1 connector on the PCI data bus, and external devices on the P2 connector, via a series of interfaces including a PCI-to-PCI Bridge, PCI interface, MUX, and a DSP core.



Simplified Block Diagram of DIO3-cPCI-CC Card

The module receives input power from the power supply via the cPCI bus. Secondary voltages of +5 V and +28 V are standard, and optional voltage of +3.3 V supplied either from the backplane or generated onboard, is available. Discrete output interfaces include bi-level optically coupled and bi-level and general purpose digital outputs. The DIO3 provides an excitation voltage output interface and includes an ADC for BIT monitoring of power supply secondary voltages.

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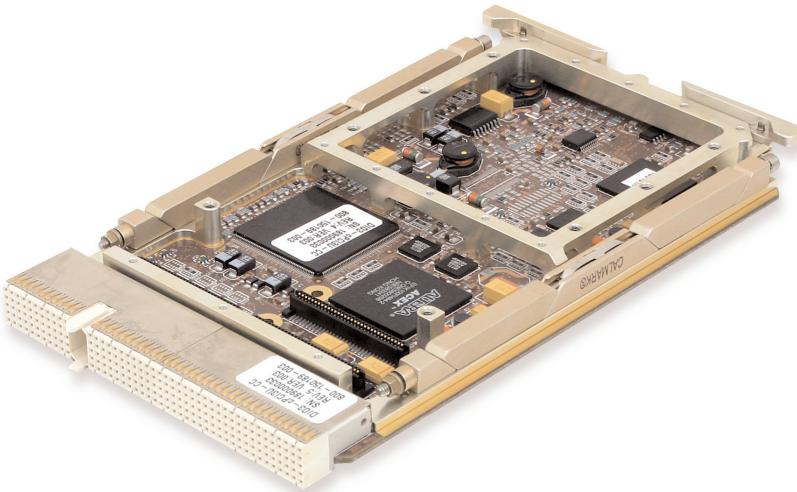
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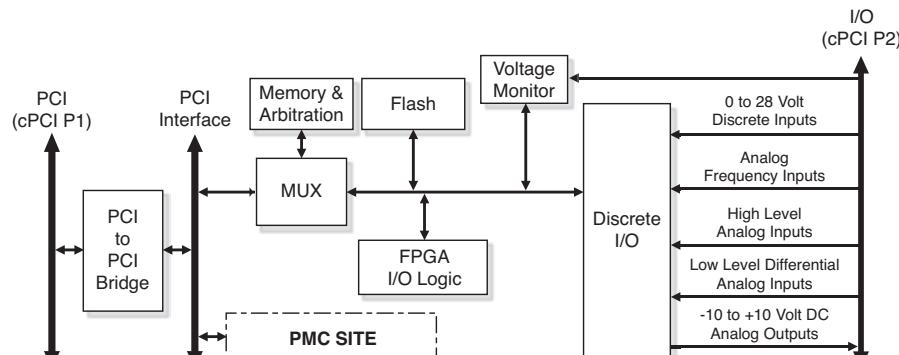
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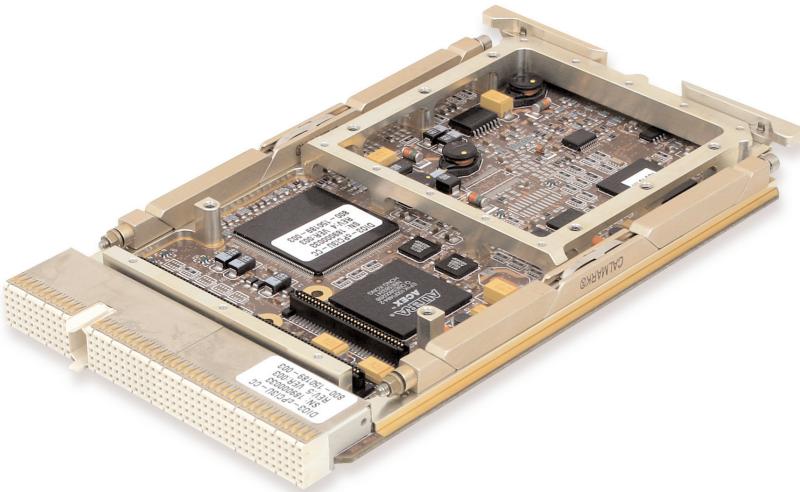
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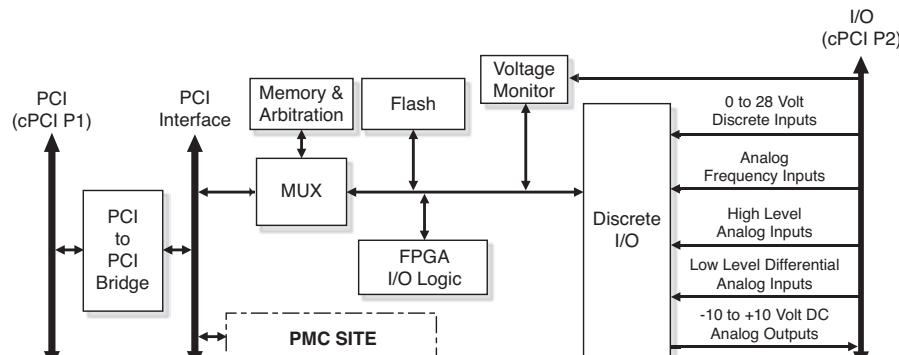
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DIO4-cPCI-CC

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- 16 HLD Loopback Inputs
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DIO I/O and Control Functions - J1

Data Bus

- 32 Bit cPCI

DIO I/O and Control Functions - J2 I/O

- Input and output flexibility provided via software programmability and configurable biasing circuitry

Input Power

- 5 VDC standard
- 3.3 VDC, +12 VDC, and -12 VDC optional on backplane or onboard

I/O Connectors

- Per IEC 61076-4-101

Model Number

DIO4-cPCI-CCAR0

Configuration

cPCI to DIO, Conduction Cooled

Power Requirements

- +5 Volts \pm 5% at 0.2 A maximum
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Temperature

- Operating: -40° to 85° C
- Storage: -55° to +95° C

Humidity

- 5% to 95%, non-condensing

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- Approximately 0.159 kg (0.35 lb.)

Dimensions

- 3U Euroboard, 100.0 mm x 160.0 mm

Vibration

- Random - 0.05 g²/Hz, 20-2,000 Hz for 1 hour on each axis
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MTBF

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Conformal Coating

Quality Assurance

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- BIT monitoring for failure detection

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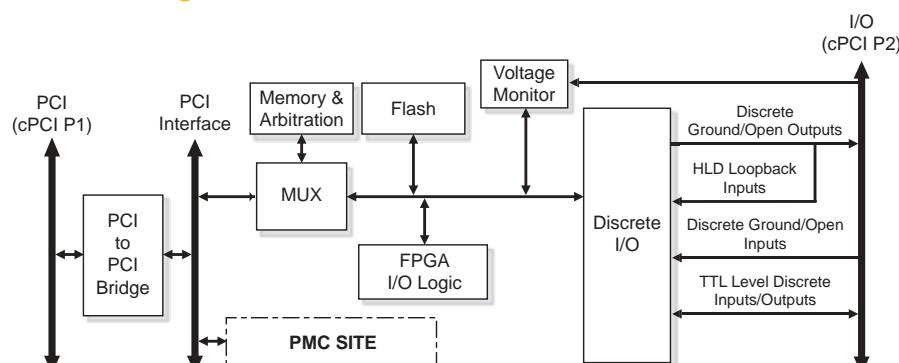


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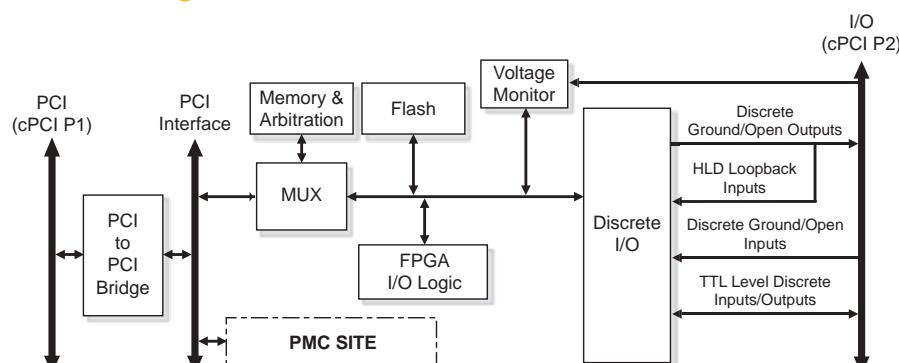


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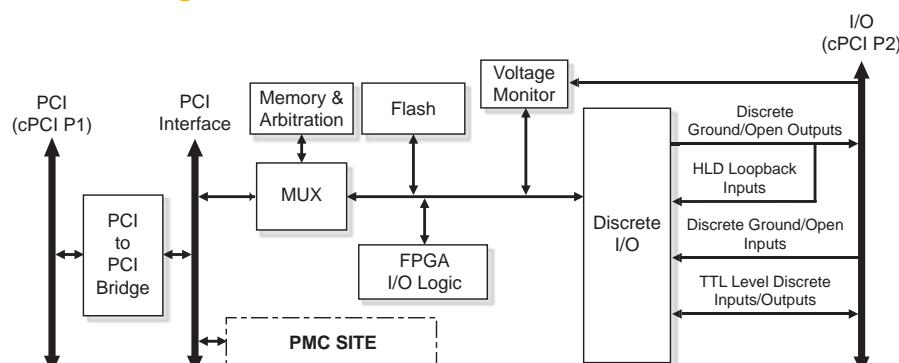


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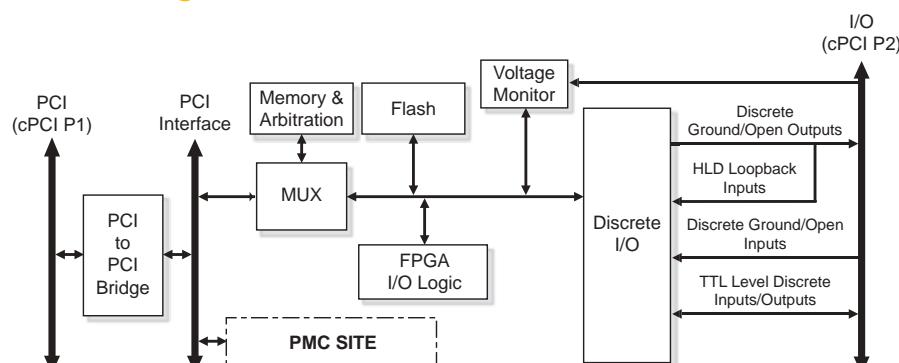


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- 16 TTL Level Discrete Outputs
- 1 cPCI interface - conforms to requirements of PICMG 2.0 R2.1 for Target board

DIO I/O and Control Functions - J1

Data Bus

- 32 Bit cPCI

DIO I/O and Control Functions - J2 I/O

- Input and output flexibility provided via software programmability and configurable biasing circuitry

Input Power

- 5 VDC standard
- 3.3 VDC, +12 VDC, and -12 VDC optional on backplane or onboard

I/O Connectors

- Per IEC 61076-4-101

Model Number

DIO4-cPCI-CCAR0

Configuration

cPCI to DIO, Conduction Cooled

Power Requirements

- +5 Volts \pm 5% at 0.2 A maximum
- +3.3 Volts \pm 5% at 0.4 A maximum

Temperature

- Operating: -40° to 85° C
- Storage: -55° to +95° C

Humidity

- 5% to 95%, non-condensing

Weight

- Approximately 0.159 kg (0.35 lb.)

Dimensions

- 3U Euroboard, 100.0 mm x 160.0 mm

Vibration

- Random - 0.05 g²/Hz, 20-2,000 Hz for 1 hour on each axis
- Endurance - 0.06 g²/Hz for 3 hours on each axis

MTBF

- >70,000 hours

Conformal Coating

Quality Assurance

- Designed and tested to ISO-9001 certified procedures

Built-in Test Capability

- BIT monitoring for failure detection

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DIO4-cPCI-CC

DSP-Based Input/Output Module

Features

3U cPCI Conduction Cooled

PMC Mezzanine

- Supports a conduction cooled PMC module
- 32-bit 33 MHz

Inputs/Outputs

- 24 Discrete Ground/Open Inputs 0 to 28 V
- 16 TTL Level Discrete Inputs
- 16 TTL Level Discrete Outputs
- 16 HLD Loopback Inputs
- 16 Discrete Ground/Open Outputs

I/O Controller

- Altera 1K series FPGA with embedded IP PCI core for main processor communications

Voltage Monitor

- 8-Channel, 10-Bit ADC for monitoring power supply secondary voltages

cPCI Interface

- Conforms to PICMG 2.0 R2.1 for a Target board

Memory Area

- 128 k Words of SRAM and 256 k Words of Flash memory

Versatile Microprocessor

- Texas Instruments TMS5402
- Microcode-based design for flexible support of unique customer protocols

Software Programming

- DSP and FPGA configuration data stored in Flash memory

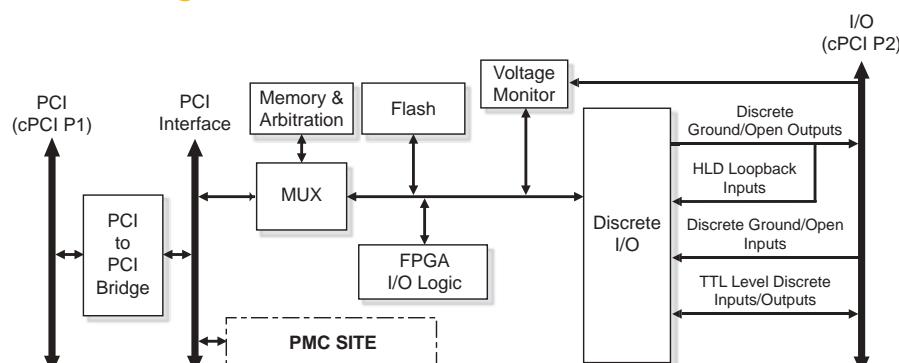


DIO4-cPCI-CC provides a highly versatile interface between the cPCI bus and DSP-Based inputs and outputs. Typical signal handling capabilities include Discrete Ground/Open outputs, High Level Discrete (HLD) Loopback inputs, and TTL level inputs and outputs. For added versatility, the card also includes a PCI Mezzanine Card Interface (PMC site). The ability to handle a wide variety of signals, perform on-the-fly signal processing, together with its conduction cooled temperature range makes the DIO4-cPCI-CC ideal for use in mission computers and other applications with harsh environmental demands.

DSP program code and FPGA configuration data can be downloaded and stored in FLASH memory via the host processor of the cPCI bus, allowing the card to combine the functionality of several individual speciality cards, saving precious backplane slots and the additional power, weight, and cooling requirements associated with those extra slots.

Signals move between the P1 connector on the PCI data bus, and external devices on the P2 connector, via a series of interfaces including a PCI-to-PCI Bridge, PCI interface, MUX, and a DSP core.

Simplified Block Diagram of DIO4-cPCI-CC Card



The module receives input power from the power supply via the cPCI bus. A secondary voltage of +5 V is standard, and optional voltages of +3.3 V, +12 V, and -12 V supplied either from the backplane or generated onboard, are available. Discrete output interfaces include discrete ground/open outputs and general purpose TTL digital outputs. The DIO4 also provides HLD loopback inputs and includes an ADC for BIT monitoring of power supply secondary voltages.



DIO4-cPCI-CC

Configurations

Specifications

Form Factor

- 3U cPCI

**Designed in Accordance
with IEEE 1101.2 and VITA
30.1**

Electrical Interfaces

- 24 Discrete Ground/Open Inputs 0 to 28 V
- 16 TTL Level Discrete Inputs
- 16 HLD Loopback Inputs
- 16 Discrete Ground/Open Outputs
- 16 TTL Level Discrete Outputs
- 1 cPCI interface - conforms to requirements of PICMG 2.0 R2.1 for Target board

DIO I/O and Control Functions - J1

Data Bus

- 32 Bit cPCI

DIO I/O and Control Functions - J2 I/O

- Input and output flexibility provided via software programmability and configurable biasing circuitry

Input Power

- 5 VDC standard
- 3.3 VDC, +12 VDC, and -12 VDC optional on backplane or onboard

I/O Connectors

- Per IEC 61076-4-101

Model Number

DIO4-cPCI-CCAR0

Configuration

cPCI to DIO, Conduction Cooled

Power Requirements

- +5 Volts \pm 5% at 0.2 A maximum
- +3.3 Volts \pm 5% at 0.4 A maximum

Temperature

- Operating: -40° to 85° C
- Storage: -55° to +95° C

Humidity

- 5% to 95%, non-condensing

Weight

- Approximately 0.159 kg (0.35 lb.)

Dimensions

- 3U Euroboard, 100.0 mm x 160.0 mm

Vibration

- Random - 0.05 g²/Hz, 20-2,000 Hz for 1 hour on each axis
- Endurance - 0.06 g²/Hz for 3 hours on each axis

MTBF

- >70,000 hours

Conformal Coating

Quality Assurance

- Designed and tested to ISO-9001 certified procedures

Built-in Test Capability

- BIT monitoring for failure detection

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DIO4-cPCI-CC

DSP-Based Input/Output Module

Features

3U cPCI Conduction Cooled

PMC Mezzanine

- Supports a conduction cooled PMC module
- 32-bit 33 MHz

Inputs/Outputs

- 24 Discrete Ground/Open Inputs 0 to 28 V
- 16 TTL Level Discrete Inputs
- 16 TTL Level Discrete Outputs
- 16 HLD Loopback Inputs
- 16 Discrete Ground/Open Outputs

I/O Controller

- Altera 1K series FPGA with embedded IP PCI core for main processor communications

Voltage Monitor

- 8-Channel, 10-Bit ADC for monitoring power supply secondary voltages

cPCI Interface

- Conforms to PICMG 2.0 R2.1 for a Target board

Memory Area

- 128 k Words of SRAM and 256 k Words of Flash memory

Versatile Microprocessor

- Texas Instruments TMS5402
- Microcode-based design for flexible support of unique customer protocols

Software Programming

- DSP and FPGA configuration data stored in Flash memory

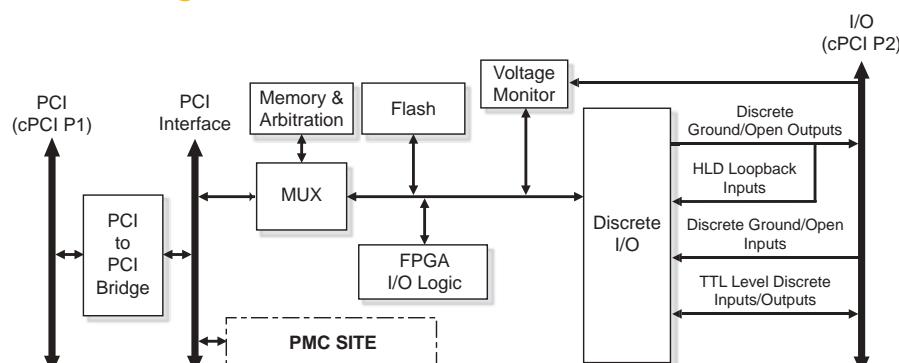


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DSP program code and FPGA configuration data can be downloaded and stored in FLASH memory via the host processor of the cPCI bus, allowing the card to combine the functionality of several individual speciality cards, saving precious backplane slots and the additional power, weight, and cooling requirements associated with those extra slots.

Signals move between the P1 connector on the PCI data bus, and external devices on the P2 connector, via a series of interfaces including a PCI-to-PCI Bridge, PCI interface, MUX, and a DSP core.

Simplified Block Diagram of DIO4-cPCI-CC Card



The module receives input power from the power supply via the cPCI bus. A secondary voltage of +5 V is standard, and optional voltages of +3.3 V, +12 V, and -12 V supplied either from the backplane or generated onboard, are available. Discrete output interfaces include discrete ground/open outputs and general purpose TTL digital outputs. The DIO4 also provides HLD loopback inputs and includes an ADC for BIT monitoring of power supply secondary voltages.



DIO4-cPCI-CC

Configurations

Specifications

Form Factor

- 3U cPCI

**Designed in Accordance
with IEEE 1101.2 and VITA
30.1**

Electrical Interfaces

- 24 Discrete Ground/Open Inputs 0 to 28 V
- 16 TTL Level Discrete Inputs
- 16 HLD Loopback Inputs
- 16 Discrete Ground/Open Outputs
- 16 TTL Level Discrete Outputs
- 1 cPCI interface - conforms to requirements of PICMG 2.0 R2.1 for Target board

DIO I/O and Control Functions - J1

Data Bus

- 32 Bit cPCI

DIO I/O and Control Functions - J2 I/O

- Input and output flexibility provided via software programmability and configurable biasing circuitry

Input Power

- 5 VDC standard
- 3.3 VDC, +12 VDC, and -12 VDC optional on backplane or onboard

I/O Connectors

- Per IEC 61076-4-101

Model Number

DIO4-cPCI-CCAR0

Configuration

cPCI to DIO, Conduction Cooled

Power Requirements

- +5 Volts \pm 5% at 0.2 A maximum
- +3.3 Volts \pm 5% at 0.4 A maximum

Temperature

- Operating: -40° to 85° C
- Storage: -55° to +95° C

Humidity

- 5% to 95%, non-condensing

Weight

- Approximately 0.159 kg (0.35 lb.)

Dimensions

- 3U Euroboard, 100.0 mm x 160.0 mm

Vibration

- Random - 0.05 g²/Hz, 20-2,000 Hz for 1 hour on each axis
- Endurance - 0.06 g²/Hz for 3 hours on each axis

MTBF

- >70,000 hours

Conformal Coating

Quality Assurance

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Built-in Test Capability

- BIT monitoring for failure detection

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DIO4-cPCI-CC

DSP-Based Input/Output Module

Features

3U cPCI Conduction Cooled

PMC Mezzanine

- Supports a conduction cooled PMC module
- 32-bit 33 MHz

Inputs/Outputs

- 24 Discrete Ground/Open Inputs
0 to 28 V
- 16 TTL Level Discrete Inputs
- 16 TTL Level Discrete Outputs
- 16 HLD Loopback Inputs
- 16 Discrete Ground/Open Outputs

I/O Controller

- Altera 1K series FPGA with embedded IP PCI core for main processor communications

Voltage Monitor

- 8-Channel, 10-Bit ADC for monitoring power supply secondary voltages

cPCI Interface

- Conforms to PICMG 2.0 R2.1 for a Target board

Memory Area

- 128 k Words of SRAM and 256 k Words of Flash memory

Versatile Microprocessor

- Texas Instruments TMS5402
- Microcode-based design for flexible support of unique customer protocols

Software Programming

- DSP and FPGA configuration data stored in Flash memory

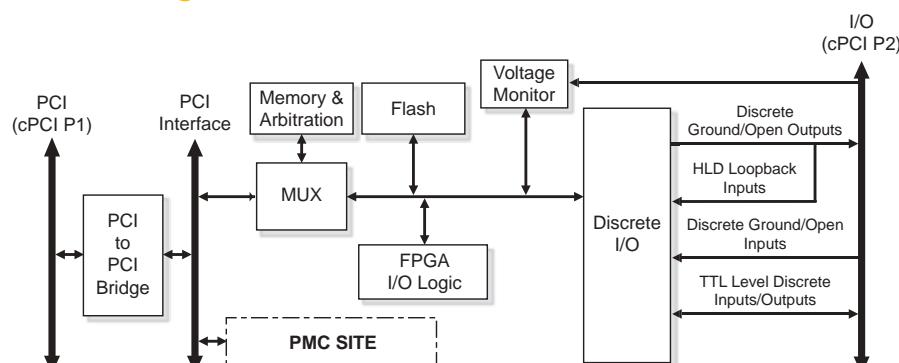


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DSP program code and FPGA configuration data can be downloaded and stored in FLASH memory via the host processor of the cPCI bus, allowing the card to combine the functionality of several individual speciality cards, saving precious backplane slots and the additional power, weight, and cooling requirements associated with those extra slots.

Signals move between the P1 connector on the PCI data bus, and external devices on the P2 connector, via a series of interfaces including a PCI-to-PCI Bridge, PCI interface, MUX, and a DSP core.

Simplified Block Diagram of DIO4-cPCI-CC Card



The module receives input power from the power supply via the cPCI bus. A secondary voltage of +5 V is standard, and optional voltages of +3.3 V, +12 V, and -12 V supplied either from the backplane or generated onboard, are available. Discrete output interfaces include discrete ground/open outputs and general purpose TTL digital outputs. The DIO4 also provides HLD loopback inputs and includes an ADC for BIT monitoring of power supply secondary voltages.



DIO4-cPCI-CC

Configurations

Specifications

Form Factor

- 3U cPCI

**Designed in Accordance
with IEEE 1101.2 and VITA
30.1**

Electrical Interfaces

- 24 Discrete Ground/Open Inputs 0 to 28 V
- 16 TTL Level Discrete Inputs
- 16 HLD Loopback Inputs
- 16 Discrete Ground/Open Outputs
- 16 TTL Level Discrete Outputs
- 1 cPCI interface - conforms to requirements of PICMG 2.0 R2.1 for Target board

DIO I/O and Control Functions - J1

Data Bus

- 32 Bit cPCI

DIO I/O and Control Functions - J2 I/O

- Input and output flexibility provided via software programmability and configurable biasing circuitry

Input Power

- 5 VDC standard
- 3.3 VDC, +12 VDC, and -12 VDC optional on backplane or onboard

I/O Connectors

- Per IEC 61076-4-101

Model Number

DIO4-cPCI-CCAR0

Configuration

cPCI to DIO, Conduction Cooled

Power Requirements

- +5 Volts \pm 5% at 0.2 A maximum
- +3.3 Volts \pm 5% at 0.4 A maximum

Temperature

- Operating: -40° to 85° C
- Storage: -55° to +95° C

Humidity

- 5% to 95%, non-condensing

Weight

- Approximately 0.159 kg (0.35 lb.)

Dimensions

- 3U Euroboard, 100.0 mm x 160.0 mm

Vibration

- Random - 0.05 g²/Hz, 20-2,000 Hz for 1 hour on each axis
- Endurance - 0.06 g²/Hz for 3 hours on each axis

MTBF

- >70,000 hours

Conformal Coating

Quality Assurance

- Designed and tested to ISO-9001 certified procedures

Built-in Test Capability

- BIT monitoring for failure detection

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DIO4-cPCI-CC

DSP-Based Input/Output Module

Features

3U cPCI Conduction Cooled

PMC Mezzanine

- Supports a conduction cooled PMC module
- 32-bit 33 MHz

Inputs/Outputs

- 24 Discrete Ground/Open Inputs
0 to 28 V
- 16 TTL Level Discrete Inputs
- 16 TTL Level Discrete Outputs
- 16 HLD Loopback Inputs
- 16 Discrete Ground/Open Outputs

I/O Controller

- Altera 1K series FPGA with embedded IP PCI core for main processor communications

Voltage Monitor

- 8-Channel, 10-Bit ADC for monitoring power supply secondary voltages

cPCI Interface

- Conforms to PICMG 2.0 R2.1 for a Target board

Memory Area

- 128 k Words of SRAM and 256 k Words of Flash memory

Versatile Microprocessor

- Texas Instruments TMS5402
- Microcode-based design for flexible support of unique customer protocols

Software Programming

- DSP and FPGA configuration data stored in Flash memory

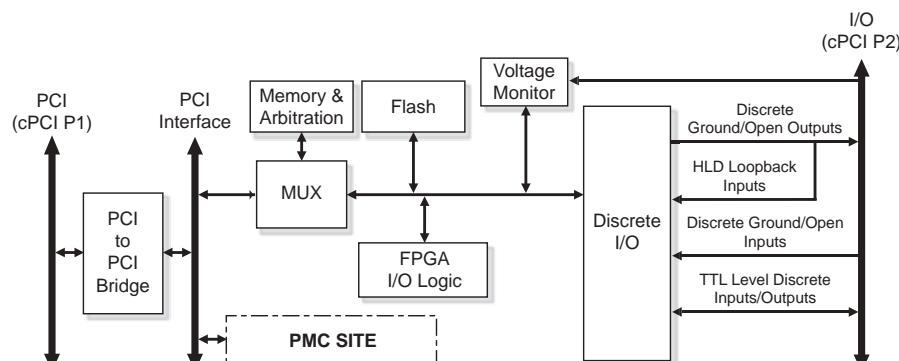


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DSP program code and FPGA configuration data can be downloaded and stored in FLASH memory via the host processor of the cPCI bus, allowing the card to combine the functionality of several individual speciality cards, saving precious backplane slots and the additional power, weight, and cooling requirements associated with those extra slots.

Signals move between the P1 connector on the PCI data bus, and external devices on the P2 connector, via a series of interfaces including a PCI-to-PCI Bridge, PCI interface, MUX, and a DSP core.

Simplified Block Diagram of DIO4-cPCI-CC Card



The module receives input power from the power supply via the cPCI bus. A secondary voltage of +5 V is standard, and optional voltages of +3.3 V, +12 V, and -12 V supplied either from the backplane or generated onboard, are available. Discrete output interfaces include discrete ground/open outputs and general purpose TTL digital outputs. The DIO4 also provides HLD loopback inputs and includes an ADC for BIT monitoring of power supply secondary voltages.



DIO4-cPCI-CC

Configurations

Specifications

Form Factor

- 3U cPCI

**Designed in Accordance
with IEEE 1101.2 and VITA
30.1**

Electrical Interfaces

- 24 Discrete Ground/Open Inputs 0 to 28 V
- 16 TTL Level Discrete Inputs
- 16 HLD Loopback Inputs
- 16 Discrete Ground/Open Outputs
- 16 TTL Level Discrete Outputs
- 1 cPCI interface - conforms to requirements of PICMG 2.0 R2.1 for Target board

DIO I/O and Control Functions - J1

Data Bus

- 32 Bit cPCI

DIO I/O and Control Functions - J2 I/O

- Input and output flexibility provided via software programmability and configurable biasing circuitry

Input Power

- 5 VDC standard
- 3.3 VDC, +12 VDC, and -12 VDC optional on backplane or onboard

I/O Connectors

- Per IEC 61076-4-101

Model Number

DIO4-cPCI-CCAR0

Configuration

cPCI to DIO, Conduction Cooled

Power Requirements

- +5 Volts \pm 5% at 0.2 A maximum
- +3.3 Volts \pm 5% at 0.4 A maximum

Temperature

- Operating: -40° to 85° C
- Storage: -55° to +95° C

Humidity

- 5% to 95%, non-condensing

Weight

- Approximately 0.159 kg (0.35 lb.)

Dimensions

- 3U Euroboard, 100.0 mm x 160.0 mm

Vibration

- Random - 0.05 g²/Hz, 20-2,000 Hz for 1 hour on each axis
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MTBF

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Conformal Coating

Quality Assurance

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Built-in Test Capability

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DIO4-cPCI-CC

DSP-Based Input/Output Module

Features

3U cPCI Conduction Cooled

PMC Mezzanine

- Supports a conduction cooled PMC module
- 32-bit 33 MHz

Inputs/Outputs

- 24 Discrete Ground/Open Inputs 0 to 28 V
- 16 TTL Level Discrete Inputs
- 16 TTL Level Discrete Outputs
- 16 HLD Loopback Inputs
- 16 Discrete Ground/Open Outputs

I/O Controller

- Altera 1K series FPGA with embedded IP PCI core for main processor communications

Voltage Monitor

- 8-Channel, 10-Bit ADC for monitoring power supply secondary voltages

cPCI Interface

- Conforms to PICMG 2.0 R2.1 for a Target board

Memory Area

- 128 k Words of SRAM and 256 k Words of Flash memory

Versatile Microprocessor

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Software Programming

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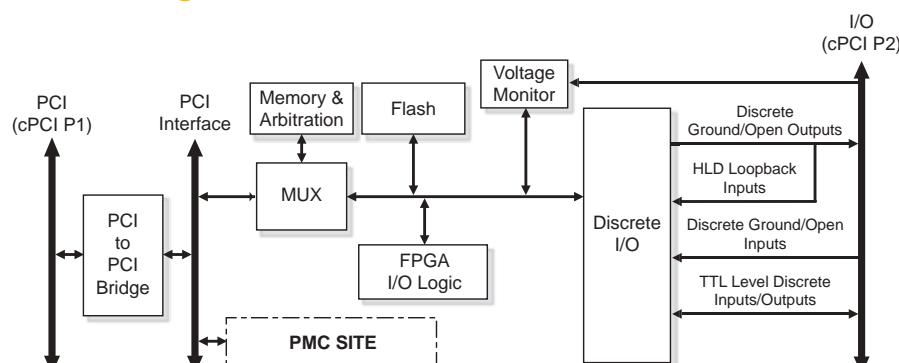


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Signals move between the P1 connector on the PCI data bus, and external devices on the P2 connector, via a series of interfaces including a PCI-to-PCI Bridge, PCI interface, MUX, and a DSP core.

Simplified Block Diagram of DIO4-cPCI-CC Card



The module receives input power from the power supply via the cPCI bus. A secondary voltage of +5 V is standard, and optional voltages of +3.3 V, +12 V, and -12 V supplied either from the backplane or generated onboard, are available. Discrete output interfaces include discrete ground/open outputs and general purpose TTL digital outputs. The DIO4 also provides HLD loopback inputs and includes an ADC for BIT monitoring of power supply secondary voltages.



DIO4-cPCI-CC

Configurations

Specifications

Form Factor

- 3U cPCI

**Designed in Accordance
with IEEE 1101.2 and VITA
30.1**

Electrical Interfaces

- 24 Discrete Ground/Open Inputs 0 to 28 V
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Input Power

- 5 VDC standard
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I/O Connectors

- Per IEC 61076-4-101

Model Number

DIO4-cPCI-CCAR0

Configuration

cPCI to DIO, Conduction Cooled

Power Requirements

- +5 Volts \pm 5% at 0.2 A maximum
- +3.3 Volts \pm 5% at 0.4 A maximum

Temperature

- Operating: -40° to 85° C
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DIO4-cPCI-CC

DSP-Based Input/Output Module

Features

3U cPCI Conduction Cooled

PMC Mezzanine

- Supports a conduction cooled PMC module
- 32-bit 33 MHz

Inputs/Outputs

- 24 Discrete Ground/Open Inputs 0 to 28 V
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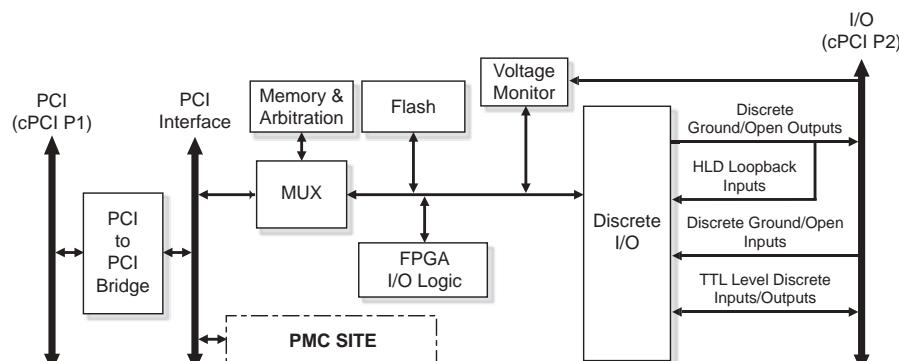


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DSP program code and FPGA configuration data can be downloaded and stored in FLASH memory via the host processor of the cPCI bus, allowing the card to combine the functionality of several individual speciality cards, saving precious backplane slots and the additional power, weight, and cooling requirements associated with those extra slots.

Signals move between the P1 connector on the PCI data bus, and external devices on the P2 connector, via a series of interfaces including a PCI-to-PCI Bridge, PCI interface, MUX, and a DSP core.

Simplified Block Diagram of DIO4-cPCI-CC Card



The module receives input power from the power supply via the cPCI bus. A secondary voltage of +5 V is standard, and optional voltages of +3.3 V, +12 V, and -12 V supplied either from the backplane or generated onboard, are available. Discrete output interfaces include discrete ground/open outputs and general purpose TTL digital outputs. The DIO4 also provides HLD loopback inputs and includes an ADC for BIT monitoring of power supply secondary voltages.



DIO4-cPCI-CC

Configurations

Specifications

Form Factor

- 3U cPCI

**Designed in Accordance
with IEEE 1101.2 and VITA
30.1**

Electrical Interfaces

- 24 Discrete Ground/Open Inputs 0 to 28 V
- 16 TTL Level Discrete Inputs
- 16 HLD Loopback Inputs
- 16 Discrete Ground/Open Outputs
- 16 TTL Level Discrete Outputs
- 1 cPCI interface - conforms to requirements of PICMG 2.0 R2.1 for Target board

DIO I/O and Control Functions - J1

Data Bus

- 32 Bit cPCI

DIO I/O and Control Functions - J2 I/O

- Input and output flexibility provided via software programmability and configurable biasing circuitry

Input Power

- 5 VDC standard
- 3.3 VDC, +12 VDC, and -12 VDC optional on backplane or onboard

I/O Connectors

- Per IEC 61076-4-101

Model Number

DIO4-cPCI-CCAR0

Configuration

cPCI to DIO, Conduction Cooled

Power Requirements

- +5 Volts \pm 5% at 0.2 A maximum
- +3.3 Volts \pm 5% at 0.4 A maximum

Temperature

- Operating: -40° to 85° C
- Storage: -55° to +95° C

Humidity

- 5% to 95%, non-condensing

Weight

- Approximately 0.159 kg (0.35 lb.)

Dimensions

- 3U Euroboard, 100.0 mm x 160.0 mm

Vibration

- Random - 0.05 g²/Hz, 20-2,000 Hz for 1 hour on each axis
- Endurance - 0.06 g²/Hz for 3 hours on each axis

MTBF

- >70,000 hours

Conformal Coating

Quality Assurance

- Designed and tested to ISO-9001 certified procedures

Built-in Test Capability

- BIT monitoring for failure detection

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DIO4-cPCI-CC

DSP-Based Input/Output Module

Features

3U cPCI Conduction Cooled

PMC Mezzanine

- Supports a conduction cooled PMC module
- 32-bit 33 MHz

Inputs/Outputs

- 24 Discrete Ground/Open Inputs
0 to 28 V
- 16 TTL Level Discrete Inputs
- 16 TTL Level Discrete Outputs
- 16 HLD Loopback Inputs
- 16 Discrete Ground/Open Outputs

I/O Controller

- Altera 1K series FPGA with embedded IP PCI core for main processor communications

Voltage Monitor

- 8-Channel, 10-Bit ADC for monitoring power supply secondary voltages

cPCI Interface

- Conforms to PICMG 2.0 R2.1 for a Target board

Memory Area

- 128 k Words of SRAM and 256 k Words of Flash memory

Versatile Microprocessor

- Texas Instruments TMS5402
- Microcode-based design for flexible support of unique customer protocols

Software Programming

- DSP and FPGA configuration data stored in Flash memory

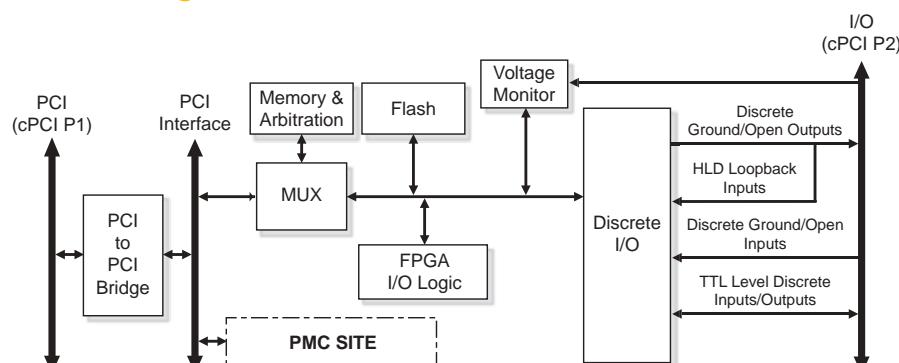


DIO4-cPCI-CC provides a highly versatile interface between the cPCI bus and DSP-Based inputs and outputs. Typical signal handling capabilities include Discrete Ground/Open outputs, High Level Discrete (HLD) Loopback inputs, and TTL level inputs and outputs. For added versatility, the card also includes a PCI Mezzanine Card Interface (PMC site). The ability to handle a wide variety of signals, perform on-the-fly signal processing, together with its conduction cooled temperature range makes the DIO4-cPCI-CC ideal for use in mission computers and other applications with harsh environmental demands.

DSP program code and FPGA configuration data can be downloaded and stored in FLASH memory via the host processor of the cPCI bus, allowing the card to combine the functionality of several individual speciality cards, saving precious backplane slots and the additional power, weight, and cooling requirements associated with those extra slots.

Signals move between the P1 connector on the PCI data bus, and external devices on the P2 connector, via a series of interfaces including a PCI-to-PCI Bridge, PCI interface, MUX, and a DSP core.

Simplified Block Diagram of DIO4-cPCI-CC Card



The module receives input power from the power supply via the cPCI bus. A secondary voltage of +5 V is standard, and optional voltages of +3.3 V, +12 V, and -12 V supplied either from the backplane or generated onboard, are available. Discrete output interfaces include discrete ground/open outputs and general purpose TTL digital outputs. The DIO4 also provides HLD loopback inputs and includes an ADC for BIT monitoring of power supply secondary voltages.



DIO4-cPCI-CC

Configurations

Specifications

Form Factor

- 3U cPCI

**Designed in Accordance
with IEEE 1101.2 and VITA
30.1**

Electrical Interfaces

- 24 Discrete Ground/Open Inputs 0 to 28 V
- 16 TTL Level Discrete Inputs
- 16 HLD Loopback Inputs
- 16 Discrete Ground/Open Outputs
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- 1 cPCI interface - conforms to requirements of PICMG 2.0 R2.1 for Target board

DIO I/O and Control Functions - J1

Data Bus

- 32 Bit cPCI

DIO I/O and Control Functions - J2 I/O

- Input and output flexibility provided via software programmability and configurable biasing circuitry

Input Power

- 5 VDC standard
- 3.3 VDC, +12 VDC, and -12 VDC optional on backplane or onboard

I/O Connectors

- Per IEC 61076-4-101

Model Number

DIO4-cPCI-CCAR0

Configuration

cPCI to DIO, Conduction Cooled

Power Requirements

- +5 Volts \pm 5% at 0.2 A maximum
- +3.3 Volts \pm 5% at 0.4 A maximum

Temperature

- Operating: -40° to 85° C
- Storage: -55° to +95° C

Humidity

- 5% to 95%, non-condensing

Weight

- Approximately 0.159 kg (0.35 lb.)

Dimensions

- 3U Euroboard, 100.0 mm x 160.0 mm

Vibration

- Random - 0.05 g²/Hz, 20-2,000 Hz for 1 hour on each axis
- Endurance - 0.06 g²/Hz for 3 hours on each axis

MTBF

- >70,000 hours

Conformal Coating

Quality Assurance

- Designed and tested to ISO-9001 certified procedures

Built-in Test Capability

- BIT monitoring for failure detection

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DIO4-cPCI-CC

DSP-Based Input/Output Module

Features

3U cPCI Conduction Cooled

PMC Mezzanine

- Supports a conduction cooled PMC module
- 32-bit 33 MHz

Inputs/Outputs

- 24 Discrete Ground/Open Inputs 0 to 28 V
- 16 TTL Level Discrete Inputs
- 16 TTL Level Discrete Outputs
- 16 HLD Loopback Inputs
- 16 Discrete Ground/Open Outputs

I/O Controller

- Altera 1K series FPGA with embedded IP PCI core for main processor communications

Voltage Monitor

- 8-Channel, 10-Bit ADC for monitoring power supply secondary voltages

cPCI Interface

- Conforms to PICMG 2.0 R2.1 for a Target board

Memory Area

- 128 k Words of SRAM and 256 k Words of Flash memory

Versatile Microprocessor

- Texas Instruments TMS5402
- Microcode-based design for flexible support of unique customer protocols

Software Programming

- DSP and FPGA configuration data stored in Flash memory

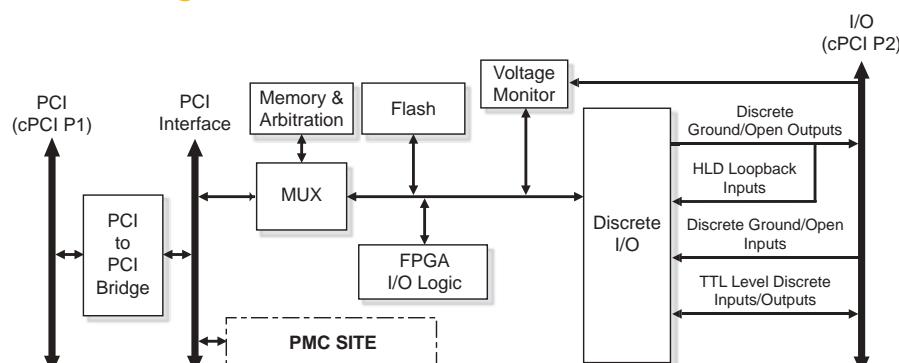


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DSP program code and FPGA configuration data can be downloaded and stored in FLASH memory via the host processor of the cPCI bus, allowing the card to combine the functionality of several individual speciality cards, saving precious backplane slots and the additional power, weight, and cooling requirements associated with those extra slots.

Signals move between the P1 connector on the PCI data bus, and external devices on the P2 connector, via a series of interfaces including a PCI-to-PCI Bridge, PCI interface, MUX, and a DSP core.

Simplified Block Diagram of DIO4-cPCI-CC Card



The module receives input power from the power supply via the cPCI bus. A secondary voltage of +5 V is standard, and optional voltages of +3.3 V, +12 V, and -12 V supplied either from the backplane or generated onboard, are available. Discrete output interfaces include discrete ground/open outputs and general purpose TTL digital outputs. The DIO4 also provides HLD loopback inputs and includes an ADC for BIT monitoring of power supply secondary voltages.



DIO4-cPCI-CC

Configurations

Specifications

Form Factor

- 3U cPCI

**Designed in Accordance
with IEEE 1101.2 and VITA
30.1**

Electrical Interfaces

- 24 Discrete Ground/Open Inputs 0 to 28 V
- 16 TTL Level Discrete Inputs
- 16 HLD Loopback Inputs
- 16 Discrete Ground/Open Outputs
- 16 TTL Level Discrete Outputs
- 1 cPCI interface - conforms to requirements of PICMG 2.0 R2.1 for Target board

DIO I/O and Control Functions - J1

Data Bus

- 32 Bit cPCI

DIO I/O and Control Functions - J2 I/O

- Input and output flexibility provided via software programmability and configurable biasing circuitry

Input Power

- 5 VDC standard
- 3.3 VDC, +12 VDC, and -12 VDC optional on backplane or onboard

I/O Connectors

- Per IEC 61076-4-101

Model Number

DIO4-cPCI-CCAR0

Configuration

cPCI to DIO, Conduction Cooled

Power Requirements

- +5 Volts \pm 5% at 0.2 A maximum
- +3.3 Volts \pm 5% at 0.4 A maximum

Temperature

- Operating: -40° to 85° C
- Storage: -55° to +95° C

Humidity

- 5% to 95%, non-condensing

Weight

- Approximately 0.159 kg (0.35 lb.)

Dimensions

- 3U Euroboard, 100.0 mm x 160.0 mm

Vibration

- Random - 0.05 g²/Hz, 20-2,000 Hz for 1 hour on each axis
- Endurance - 0.06 g²/Hz for 3 hours on each axis

MTBF

- >70,000 hours

Conformal Coating

Quality Assurance

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Built-in Test Capability

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DIO4-cPCI-CC

DSP-Based Input/Output Module

Features

3U cPCI Conduction Cooled

PMC Mezzanine

- Supports a conduction cooled PMC module
- 32-bit 33 MHz

Inputs/Outputs

- 24 Discrete Ground/Open Inputs
0 to 28 V
- 16 TTL Level Discrete Inputs
- 16 TTL Level Discrete Outputs
- 16 HLD Loopback Inputs
- 16 Discrete Ground/Open Outputs

I/O Controller

- Altera 1K series FPGA with embedded IP PCI core for main processor communications

Voltage Monitor

- 8-Channel, 10-Bit ADC for monitoring power supply secondary voltages

cPCI Interface

- Conforms to PICMG 2.0 R2.1 for a Target board

Memory Area

- 128 k Words of SRAM and 256 k Words of Flash memory

Versatile Microprocessor

- Texas Instruments TMS5402
- Microcode-based design for flexible support of unique customer protocols

Software Programming

- DSP and FPGA configuration data stored in Flash memory

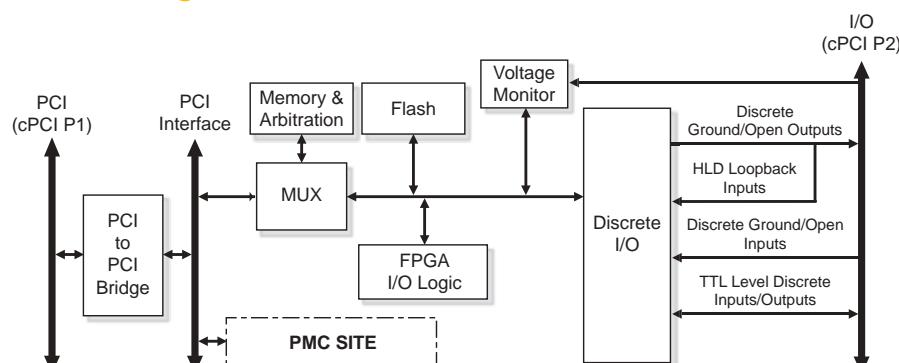


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DSP program code and FPGA configuration data can be downloaded and stored in FLASH memory via the host processor of the cPCI bus, allowing the card to combine the functionality of several individual speciality cards, saving precious backplane slots and the additional power, weight, and cooling requirements associated with those extra slots.

Signals move between the P1 connector on the PCI data bus, and external devices on the P2 connector, via a series of interfaces including a PCI-to-PCI Bridge, PCI interface, MUX, and a DSP core.

Simplified Block Diagram of DIO4-cPCI-CC Card



The module receives input power from the power supply via the cPCI bus. A secondary voltage of +5 V is standard, and optional voltages of +3.3 V, +12 V, and -12 V supplied either from the backplane or generated onboard, are available. Discrete output interfaces include discrete ground/open outputs and general purpose TTL digital outputs. The DIO4 also provides HLD loopback inputs and includes an ADC for BIT monitoring of power supply secondary voltages.



DIO4-cPCI-CC

Configurations

Specifications

Form Factor

- 3U cPCI

**Designed in Accordance
with IEEE 1101.2 and VITA
30.1**

Electrical Interfaces

- 24 Discrete Ground/Open Inputs 0 to 28 V
- 16 TTL Level Discrete Inputs
- 16 HLD Loopback Inputs
- 16 Discrete Ground/Open Outputs
- 16 TTL Level Discrete Outputs
- 1 cPCI interface - conforms to requirements of PICMG 2.0 R2.1 for Target board

DIO I/O and Control Functions - J1

Data Bus

- 32 Bit cPCI

DIO I/O and Control Functions - J2 I/O

- Input and output flexibility provided via software programmability and configurable biasing circuitry

Input Power

- 5 VDC standard
- 3.3 VDC, +12 VDC, and -12 VDC optional on backplane or onboard

I/O Connectors

- Per IEC 61076-4-101

Model Number

DIO4-cPCI-CCAR0

Configuration

cPCI to DIO, Conduction Cooled

Power Requirements

- +5 Volts \pm 5% at 0.2 A maximum
- +3.3 Volts \pm 5% at 0.4 A maximum

Temperature

- Operating: -40° to 85° C
- Storage: -55° to +95° C

Humidity

- 5% to 95%, non-condensing

Weight

- Approximately 0.159 kg (0.35 lb.)

Dimensions

- 3U Euroboard, 100.0 mm x 160.0 mm

Vibration

- Random - 0.05 g²/Hz, 20-2,000 Hz for 1 hour on each axis
- Endurance - 0.06 g²/Hz for 3 hours on each axis

MTBF

- >70,000 hours

Conformal Coating

Quality Assurance

- Designed and tested to ISO-9001 certified procedures

Built-in Test Capability

- BIT monitoring for failure detection

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DIO4-cPCI-CC

DSP-Based Input/Output Module

Features

3U cPCI Conduction Cooled

PMC Mezzanine

- Supports a conduction cooled PMC module
- 32-bit 33 MHz

Inputs/Outputs

- 24 Discrete Ground/Open Inputs 0 to 28 V
- 16 TTL Level Discrete Inputs
- 16 TTL Level Discrete Outputs
- 16 HLD Loopback Inputs
- 16 Discrete Ground/Open Outputs

I/O Controller

- Altera 1K series FPGA with embedded IP PCI core for main processor communications

Voltage Monitor

- 8-Channel, 10-Bit ADC for monitoring power supply secondary voltages

cPCI Interface

- Conforms to PICMG 2.0 R2.1 for a Target board

Memory Area

- 128 k Words of SRAM and 256 k Words of Flash memory

Versatile Microprocessor

- Texas Instruments TMS5402
- Microcode-based design for flexible support of unique customer protocols

Software Programming

- DSP and FPGA configuration data stored in Flash memory

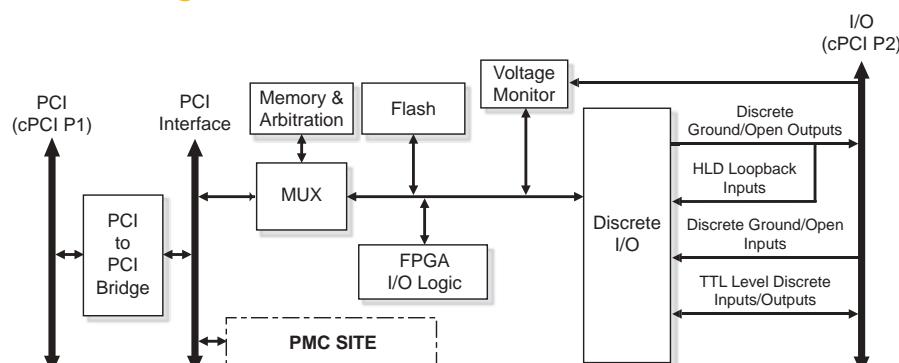


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DSP program code and FPGA configuration data can be downloaded and stored in FLASH memory via the host processor of the cPCI bus, allowing the card to combine the functionality of several individual speciality cards, saving precious backplane slots and the additional power, weight, and cooling requirements associated with those extra slots.

Signals move between the P1 connector on the PCI data bus, and external devices on the P2 connector, via a series of interfaces including a PCI-to-PCI Bridge, PCI interface, MUX, and a DSP core.

Simplified Block Diagram of DIO4-cPCI-CC Card



The module receives input power from the power supply via the cPCI bus. A secondary voltage of +5 V is standard, and optional voltages of +3.3 V, +12 V, and -12 V supplied either from the backplane or generated onboard, are available. Discrete output interfaces include discrete ground/open outputs and general purpose TTL digital outputs. The DIO4 also provides HLD loopback inputs and includes an ADC for BIT monitoring of power supply secondary voltages.



DIO4-cPCI-CC

Configurations

Specifications

Form Factor

- 3U cPCI

**Designed in Accordance
with IEEE 1101.2 and VITA
30.1**

Electrical Interfaces

- 24 Discrete Ground/Open Inputs 0 to 28 V
- 16 TTL Level Discrete Inputs
- 16 HLD Loopback Inputs
- 16 Discrete Ground/Open Outputs
- 16 TTL Level Discrete Outputs
- 1 cPCI interface - conforms to requirements of PICMG 2.0 R2.1 for Target board

DIO I/O and Control Functions - J1

Data Bus

- 32 Bit cPCI

DIO I/O and Control Functions - J2 I/O

- Input and output flexibility provided via software programmability and configurable biasing circuitry

Input Power

- 5 VDC standard
- 3.3 VDC, +12 VDC, and -12 VDC optional on backplane or onboard

I/O Connectors

- Per IEC 61076-4-101

Model Number

DIO4-cPCI-CCAR0

Configuration

cPCI to DIO, Conduction Cooled

Power Requirements

- +5 Volts \pm 5% at 0.2 A maximum
- +3.3 Volts \pm 5% at 0.4 A maximum

Temperature

- Operating: -40° to 85° C
- Storage: -55° to +95° C

Humidity

- 5% to 95%, non-condensing

Weight

- Approximately 0.159 kg (0.35 lb.)

Dimensions

- 3U Euroboard, 100.0 mm x 160.0 mm

Vibration

- Random - 0.05 g²/Hz, 20-2,000 Hz for 1 hour on each axis
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Quality Assurance

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Built-in Test Capability

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DIO4-cPCI-CC

DSP-Based Input/Output Module

Features

3U cPCI Conduction Cooled

PMC Mezzanine

- Supports a conduction cooled PMC module
- 32-bit 33 MHz

Inputs/Outputs

- 24 Discrete Ground/Open Inputs 0 to 28 V
- 16 TTL Level Discrete Inputs
- 16 TTL Level Discrete Outputs
- 16 HLD Loopback Inputs
- 16 Discrete Ground/Open Outputs

I/O Controller

- Altera 1K series FPGA with embedded IP PCI core for main processor communications

Voltage Monitor

- 8-Channel, 10-Bit ADC for monitoring power supply secondary voltages

cPCI Interface

- Conforms to PICMG 2.0 R2.1 for a Target board

Memory Area

- 128 k Words of SRAM and 256 k Words of Flash memory

Versatile Microprocessor

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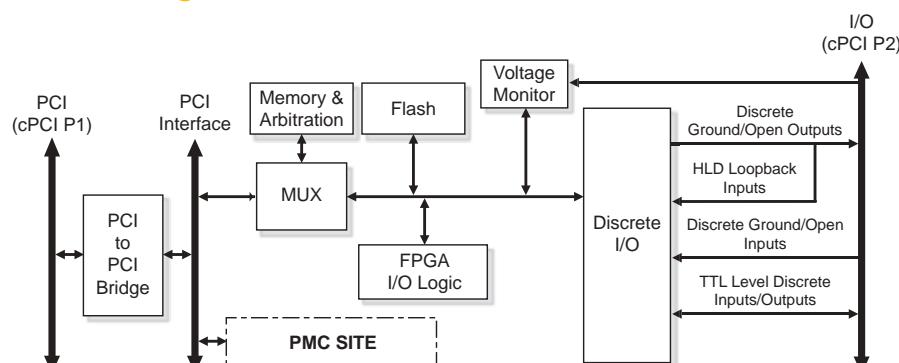


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DIO4-cPCI-CC

Configurations

Specifications

Form Factor

- 3U cPCI

**Designed in Accordance
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30.1**

Electrical Interfaces

- 24 Discrete Ground/Open Inputs 0 to 28 V
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DIO I/O and Control Functions - J1

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- 32 Bit cPCI

DIO I/O and Control Functions - J2 I/O

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Input Power

- 5 VDC standard
- 3.3 VDC, +12 VDC, and -12 VDC optional on backplane or onboard

I/O Connectors

- Per IEC 61076-4-101

Model Number

DIO4-cPCI-CCAR0

Configuration

cPCI to DIO, Conduction Cooled

Power Requirements

- +5 Volts \pm 5% at 0.2 A maximum
- +3.3 Volts \pm 5% at 0.4 A maximum

Temperature

- Operating: -40° to 85° C
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DIO4-cPCI-CC

DSP-Based Input/Output Module

Features

3U cPCI Conduction Cooled

PMC Mezzanine

- Supports a conduction cooled PMC module
- 32-bit 33 MHz

Inputs/Outputs

- 24 Discrete Ground/Open Inputs
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- DSP and FPGA configuration data stored in Flash memory

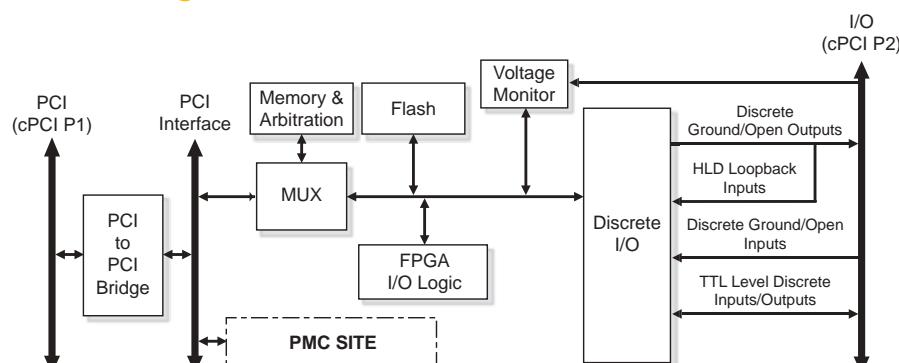


DIO4-cPCI-CC provides a highly versatile interface between the cPCI bus and DSP-Based inputs and outputs. Typical signal handling capabilities include Discrete Ground/Open outputs, High Level Discrete (HLD) Loopback inputs, and TTL level inputs and outputs. For added versatility, the card also includes a PCI Mezzanine Card Interface (PMC site). The ability to handle a wide variety of signals, perform on-the-fly signal processing, together with its conduction cooled temperature range makes the DIO4-cPCI-CC ideal for use in mission computers and other applications with harsh environmental demands.

DSP program code and FPGA configuration data can be downloaded and stored in FLASH memory via the host processor of the cPCI bus, allowing the card to combine the functionality of several individual speciality cards, saving precious backplane slots and the additional power, weight, and cooling requirements associated with those extra slots.

Signals move between the P1 connector on the PCI data bus, and external devices on the P2 connector, via a series of interfaces including a PCI-to-PCI Bridge, PCI interface, MUX, and a DSP core.

Simplified Block Diagram of DIO4-cPCI-CC Card



The module receives input power from the power supply via the cPCI bus. A secondary voltage of +5 V is standard, and optional voltages of +3.3 V, +12 V, and -12 V supplied either from the backplane or generated onboard, are available. Discrete output interfaces include discrete ground/open outputs and general purpose TTL digital outputs. The DIO4 also provides HLD loopback inputs and includes an ADC for BIT monitoring of power supply secondary voltages.



DIO4-cPCI-CC

Configurations

Specifications

Form Factor

- 3U cPCI

**Designed in Accordance
with IEEE 1101.2 and VITA
30.1**

Electrical Interfaces

- 24 Discrete Ground/Open Inputs 0 to 28 V
- 16 TTL Level Discrete Inputs
- 16 HLD Loopback Inputs
- 16 Discrete Ground/Open Outputs
- 16 TTL Level Discrete Outputs
- 1 cPCI interface - conforms to requirements of PICMG 2.0 R2.1 for Target board

DIO I/O and Control Functions - J1

Data Bus

- 32 Bit cPCI

DIO I/O and Control Functions - J2 I/O

- Input and output flexibility provided via software programmability and configurable biasing circuitry

Input Power

- 5 VDC standard
- 3.3 VDC, +12 VDC, and -12 VDC optional on backplane or onboard

I/O Connectors

- Per IEC 61076-4-101

Model Number

DIO4-cPCI-CCAR0

Configuration

cPCI to DIO, Conduction Cooled

Power Requirements

- +5 Volts \pm 5% at 0.2 A maximum
- +3.3 Volts \pm 5% at 0.4 A maximum

Temperature

- Operating: -40° to 85° C
- Storage: -55° to +95° C

Humidity

- 5% to 95%, non-condensing

Weight

- Approximately 0.159 kg (0.35 lb.)

Dimensions

- 3U Euroboard, 100.0 mm x 160.0 mm

Vibration

- Random - 0.05 g²/Hz, 20-2,000 Hz for 1 hour on each axis
- Endurance - 0.06 g²/Hz for 3 hours on each axis

MTBF

- >70,000 hours

Conformal Coating

Quality Assurance

- Designed and tested to ISO-9001 certified procedures

Built-in Test Capability

- BIT monitoring for failure detection

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DIO4-cPCI-CC

DSP-Based Input/Output Module

Features

3U cPCI Conduction Cooled

PMC Mezzanine

- Supports a conduction cooled PMC module
- 32-bit 33 MHz

Inputs/Outputs

- 24 Discrete Ground/Open Inputs
0 to 28 V
- 16 TTL Level Discrete Inputs
- 16 TTL Level Discrete Outputs
- 16 HLD Loopback Inputs
- 16 Discrete Ground/Open Outputs

I/O Controller

- Altera 1K series FPGA with embedded IP PCI core for main processor communications

Voltage Monitor

- 8-Channel, 10-Bit ADC for monitoring power supply secondary voltages

cPCI Interface

- Conforms to PICMG 2.0 R2.1 for a Target board

Memory Area

- 128 k Words of SRAM and 256 k Words of Flash memory

Versatile Microprocessor

- Texas Instruments TMS5402
- Microcode-based design for flexible support of unique customer protocols

Software Programming

- DSP and FPGA configuration data stored in Flash memory

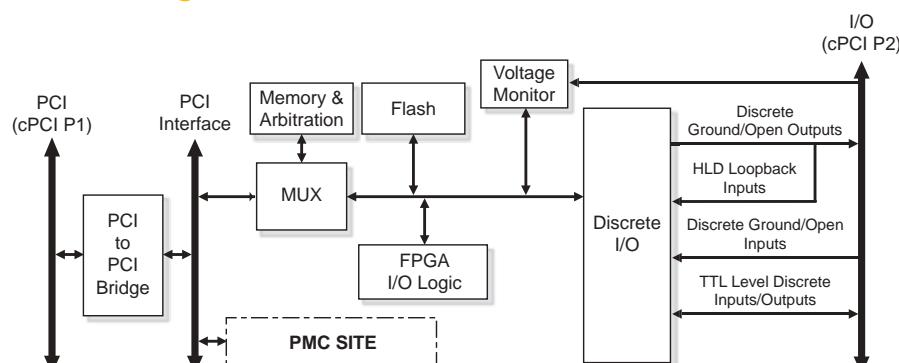


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DSP program code and FPGA configuration data can be downloaded and stored in FLASH memory via the host processor of the cPCI bus, allowing the card to combine the functionality of several individual speciality cards, saving precious backplane slots and the additional power, weight, and cooling requirements associated with those extra slots.

Signals move between the P1 connector on the PCI data bus, and external devices on the P2 connector, via a series of interfaces including a PCI-to-PCI Bridge, PCI interface, MUX, and a DSP core.

Simplified Block Diagram of DIO4-cPCI-CC Card



The module receives input power from the power supply via the cPCI bus. A secondary voltage of +5 V is standard, and optional voltages of +3.3 V, +12 V, and -12 V supplied either from the backplane or generated onboard, are available. Discrete output interfaces include discrete ground/open outputs and general purpose TTL digital outputs. The DIO4 also provides HLD loopback inputs and includes an ADC for BIT monitoring of power supply secondary voltages.



DIO4-cPCI-CC

Configurations

Specifications

Form Factor

- 3U cPCI

**Designed in Accordance
with IEEE 1101.2 and VITA
30.1**

Electrical Interfaces

- 24 Discrete Ground/Open Inputs 0 to 28 V
- 16 TTL Level Discrete Inputs
- 16 HLD Loopback Inputs
- 16 Discrete Ground/Open Outputs
- 16 TTL Level Discrete Outputs
- 1 cPCI interface - conforms to requirements of PICMG 2.0 R2.1 for Target board

DIO I/O and Control Functions - J1

Data Bus

- 32 Bit cPCI

DIO I/O and Control Functions - J2 I/O

- Input and output flexibility provided via software programmability and configurable biasing circuitry

Input Power

- 5 VDC standard
- 3.3 VDC, +12 VDC, and -12 VDC optional on backplane or onboard

I/O Connectors

- Per IEC 61076-4-101

Model Number

DIO4-cPCI-CCAR0

Configuration

cPCI to DIO, Conduction Cooled

Power Requirements

- +5 Volts \pm 5% at 0.2 A maximum
- +3.3 Volts \pm 5% at 0.4 A maximum

Temperature

- Operating: -40° to 85° C
- Storage: -55° to +95° C

Humidity

- 5% to 95%, non-condensing

Weight

- Approximately 0.159 kg (0.35 lb.)

Dimensions

- 3U Euroboard, 100.0 mm x 160.0 mm

Vibration

- Random - 0.05 g²/Hz, 20-2,000 Hz for 1 hour on each axis
- Endurance - 0.06 g²/Hz for 3 hours on each axis

MTBF

- >70,000 hours

Conformal Coating

Quality Assurance

- Designed and tested to ISO-9001 certified procedures

Built-in Test Capability

- BIT monitoring for failure detection

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DIO4-cPCI-CC

DSP-Based Input/Output Module

Features

3U cPCI Conduction Cooled

PMC Mezzanine

- Supports a conduction cooled PMC module
- 32-bit 33 MHz

Inputs/Outputs

- 24 Discrete Ground/Open Inputs 0 to 28 V
- 16 TTL Level Discrete Inputs
- 16 TTL Level Discrete Outputs
- 16 HLD Loopback Inputs
- 16 Discrete Ground/Open Outputs

I/O Controller

- Altera 1K series FPGA with embedded IP PCI core for main processor communications

Voltage Monitor

- 8-Channel, 10-Bit ADC for monitoring power supply secondary voltages

cPCI Interface

- Conforms to PICMG 2.0 R2.1 for a Target board

Memory Area

- 128 k Words of SRAM and 256 k Words of Flash memory

Versatile Microprocessor

- Texas Instruments TMS5402
- Microcode-based design for flexible support of unique customer protocols

Software Programming

- DSP and FPGA configuration data stored in Flash memory

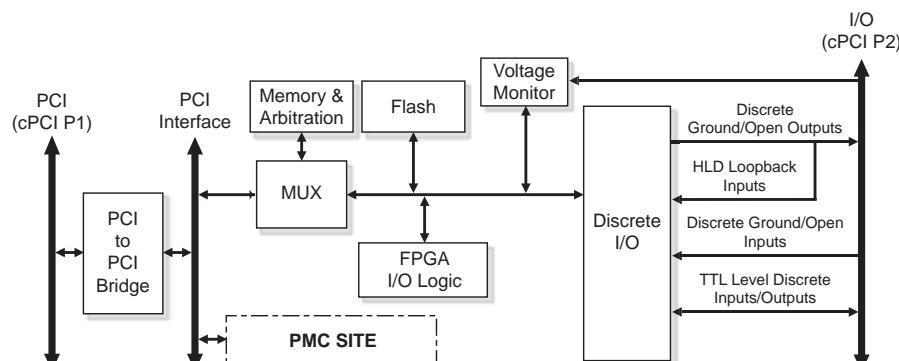


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Signals move between the P1 connector on the PCI data bus, and external devices on the P2 connector, via a series of interfaces including a PCI-to-PCI Bridge, PCI interface, MUX, and a DSP core.

Simplified Block Diagram of DIO4-cPCI-CC Card



The module receives input power from the power supply via the cPCI bus. A secondary voltage of +5 V is standard, and optional voltages of +3.3 V, +12 V, and -12 V supplied either from the backplane or generated onboard, are available. Discrete output interfaces include discrete ground/open outputs and general purpose TTL digital outputs. The DIO4 also provides HLD loopback inputs and includes an ADC for BIT monitoring of power supply secondary voltages.



DIO4-cPCI-CC

Configurations

Specifications

Form Factor

- 3U cPCI

**Designed in Accordance
with IEEE 1101.2 and VITA
30.1**

Electrical Interfaces

- 24 Discrete Ground/Open Inputs 0 to 28 V
- 16 TTL Level Discrete Inputs
- 16 HLD Loopback Inputs
- 16 Discrete Ground/Open Outputs
- 16 TTL Level Discrete Outputs
- 1 cPCI interface - conforms to requirements of PICMG 2.0 R2.1 for Target board

DIO I/O and Control Functions - J1

Data Bus

- 32 Bit cPCI

DIO I/O and Control Functions - J2 I/O

- Input and output flexibility provided via software programmability and configurable biasing circuitry

Input Power

- 5 VDC standard
- 3.3 VDC, +12 VDC, and -12 VDC optional on backplane or onboard

I/O Connectors

- Per IEC 61076-4-101

Model Number

DIO4-cPCI-CCAR0

Configuration

cPCI to DIO, Conduction Cooled

Power Requirements

- +5 Volts \pm 5% at 0.2 A maximum
- +3.3 Volts \pm 5% at 0.4 A maximum

Temperature

- Operating: -40° to 85° C
- Storage: -55° to +95° C

Humidity

- 5% to 95%, non-condensing

Weight

- Approximately 0.159 kg (0.35 lb.)

Dimensions

- 3U Euroboard, 100.0 mm x 160.0 mm

Vibration

- Random - 0.05 g²/Hz, 20-2,000 Hz for 1 hour on each axis
- Endurance - 0.06 g²/Hz for 3 hours on each axis

MTBF

- >70,000 hours

Conformal Coating

Quality Assurance

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Built-in Test Capability

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DIO4-cPCI-CC

DSP-Based Input/Output Module

Features

3U cPCI Conduction Cooled

PMC Mezzanine

- Supports a conduction cooled PMC module
- 32-bit 33 MHz

Inputs/Outputs

- 24 Discrete Ground/Open Inputs
0 to 28 V
- 16 TTL Level Discrete Inputs
- 16 TTL Level Discrete Outputs
- 16 HLD Loopback Inputs
- 16 Discrete Ground/Open Outputs

I/O Controller

- Altera 1K series FPGA with embedded IP PCI core for main processor communications

Voltage Monitor

- 8-Channel, 10-Bit ADC for monitoring power supply secondary voltages

cPCI Interface

- Conforms to PICMG 2.0 R2.1 for a Target board

Memory Area

- 128 k Words of SRAM and 256 k Words of Flash memory

Versatile Microprocessor

- Texas Instruments TMS5402
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Software Programming

- DSP and FPGA configuration data stored in Flash memory

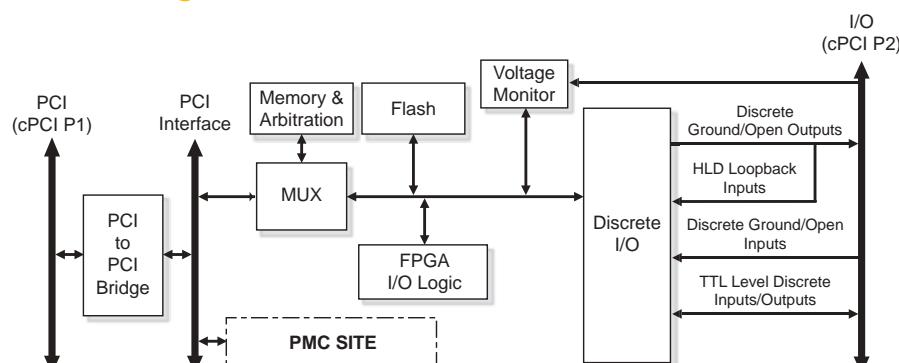


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Signals move between the P1 connector on the PCI data bus, and external devices on the P2 connector, via a series of interfaces including a PCI-to-PCI Bridge, PCI interface, MUX, and a DSP core.

Simplified Block Diagram of DIO4-cPCI-CC Card



The module receives input power from the power supply via the cPCI bus. A secondary voltage of +5 V is standard, and optional voltages of +3.3 V, +12 V, and -12 V supplied either from the backplane or generated onboard, are available. Discrete output interfaces include discrete ground/open outputs and general purpose TTL digital outputs. The DIO4 also provides HLD loopback inputs and includes an ADC for BIT monitoring of power supply secondary voltages.



DIO4-cPCI-CC

Configurations

Specifications

Form Factor

- 3U cPCI

**Designed in Accordance
with IEEE 1101.2 and VITA
30.1**

Electrical Interfaces

- 24 Discrete Ground/Open Inputs 0 to 28 V
- 16 TTL Level Discrete Inputs
- 16 HLD Loopback Inputs
- 16 Discrete Ground/Open Outputs
- 16 TTL Level Discrete Outputs
- 1 cPCI interface - conforms to requirements of PICMG 2.0 R2.1 for Target board

DIO I/O and Control Functions - J1

Data Bus

- 32 Bit cPCI

DIO I/O and Control Functions - J2 I/O

- Input and output flexibility provided via software programmability and configurable biasing circuitry

Input Power

- 5 VDC standard
- 3.3 VDC, +12 VDC, and -12 VDC optional on backplane or onboard

I/O Connectors

- Per IEC 61076-4-101

Model Number

DIO4-cPCI-CCAR0

Configuration

cPCI to DIO, Conduction Cooled

Power Requirements

- +5 Volts \pm 5% at 0.2 A maximum
- +3.3 Volts \pm 5% at 0.4 A maximum

Temperature

- Operating: -40° to 85° C
- Storage: -55° to +95° C

Humidity

- 5% to 95%, non-condensing

Weight

- Approximately 0.159 kg (0.35 lb.)

Dimensions

- 3U Euroboard, 100.0 mm x 160.0 mm

Vibration

- Random - 0.05 g²/Hz, 20-2,000 Hz for 1 hour on each axis
- Endurance - 0.06 g²/Hz for 3 hours on each axis

MTBF

- >70,000 hours

Conformal Coating

Quality Assurance

- Designed and tested to ISO-9001 certified procedures

Built-in Test Capability

- BIT monitoring for failure detection

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DIO4-cPCI-CC

DSP-Based Input/Output Module

Features

3U cPCI Conduction Cooled

PMC Mezzanine

- Supports a conduction cooled PMC module
- 32-bit 33 MHz

Inputs/Outputs

- 24 Discrete Ground/Open Inputs
0 to 28 V
- 16 TTL Level Discrete Inputs
- 16 TTL Level Discrete Outputs
- 16 HLD Loopback Inputs
- 16 Discrete Ground/Open Outputs

I/O Controller

- Altera 1K series FPGA with embedded IP PCI core for main processor communications

Voltage Monitor

- 8-Channel, 10-Bit ADC for monitoring power supply secondary voltages

cPCI Interface

- Conforms to PICMG 2.0 R2.1 for a Target board

Memory Area

- 128 k Words of SRAM and 256 k Words of Flash memory

Versatile Microprocessor

- Texas Instruments TMS5402
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Software Programming

- DSP and FPGA configuration data stored in Flash memory

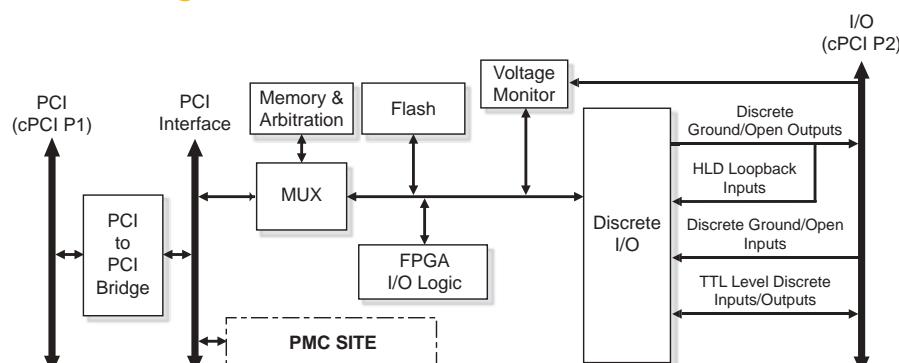


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Signals move between the P1 connector on the PCI data bus, and external devices on the P2 connector, via a series of interfaces including a PCI-to-PCI Bridge, PCI interface, MUX, and a DSP core.

Simplified Block Diagram of DIO4-cPCI-CC Card



The module receives input power from the power supply via the cPCI bus. A secondary voltage of +5 V is standard, and optional voltages of +3.3 V, +12 V, and -12 V supplied either from the backplane or generated onboard, are available. Discrete output interfaces include discrete ground/open outputs and general purpose TTL digital outputs. The DIO4 also provides HLD loopback inputs and includes an ADC for BIT monitoring of power supply secondary voltages.



DIO4-cPCI-CC

Configurations

Specifications

Form Factor

- 3U cPCI

**Designed in Accordance
with IEEE 1101.2 and VITA
30.1**

Electrical Interfaces

- 24 Discrete Ground/Open Inputs 0 to 28 V
- 16 TTL Level Discrete Inputs
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- 1 cPCI interface - conforms to requirements of PICMG 2.0 R2.1 for Target board

DIO I/O and Control Functions - J1

Data Bus

- 32 Bit cPCI

DIO I/O and Control Functions - J2 I/O

- Input and output flexibility provided via software programmability and configurable biasing circuitry

Input Power

- 5 VDC standard
- 3.3 VDC, +12 VDC, and -12 VDC optional on backplane or onboard

I/O Connectors

- Per IEC 61076-4-101

Model Number

DIO4-cPCI-CCAR0

Configuration

cPCI to DIO, Conduction Cooled

Power Requirements

- +5 Volts \pm 5% at 0.2 A maximum
- +3.3 Volts \pm 5% at 0.4 A maximum

Temperature

- Operating: -40° to 85° C
- Storage: -55° to +95° C

Humidity

- 5% to 95%, non-condensing

Weight

- Approximately 0.159 kg (0.35 lb.)

Dimensions

- 3U Euroboard, 100.0 mm x 160.0 mm

Vibration

- Random - 0.05 g²/Hz, 20-2,000 Hz for 1 hour on each axis
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DIO4-cPCI-CC

DSP-Based Input/Output Module

Features

3U cPCI Conduction Cooled

PMC Mezzanine

- Supports a conduction cooled PMC module
- 32-bit 33 MHz

Inputs/Outputs

- 24 Discrete Ground/Open Inputs 0 to 28 V
- 16 TTL Level Discrete Inputs
- 16 TTL Level Discrete Outputs
- 16 HLD Loopback Inputs
- 16 Discrete Ground/Open Outputs

I/O Controller

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Memory Area

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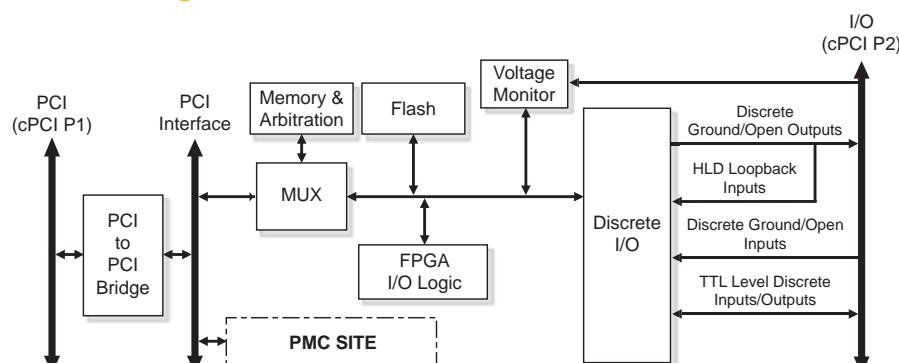


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Simplified Block Diagram of DIO4-cPCI-CC Card



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DIO4-cPCI-CC

Configurations

Specifications

Form Factor

- 3U cPCI

**Designed in Accordance
with IEEE 1101.2 and VITA
30.1**

Electrical Interfaces

- 24 Discrete Ground/Open Inputs 0 to 28 V
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DIO I/O and Control Functions - J1

Data Bus

- 32 Bit cPCI

DIO I/O and Control Functions - J2 I/O

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Input Power

- 5 VDC standard
- 3.3 VDC, +12 VDC, and -12 VDC optional on backplane or onboard

I/O Connectors

- Per IEC 61076-4-101

Model Number

DIO4-cPCI-CCAR0

Configuration

cPCI to DIO, Conduction Cooled

Power Requirements

- +5 Volts \pm 5% at 0.2 A maximum
- +3.3 Volts \pm 5% at 0.4 A maximum

Temperature

- Operating: -40° to 85° C
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DIO4-cPCI-CC

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Features

3U cPCI Conduction Cooled

PMC Mezzanine

- Supports a conduction cooled PMC module
- 32-bit 33 MHz

Inputs/Outputs

- 24 Discrete Ground/Open Inputs 0 to 28 V
- 16 TTL Level Discrete Inputs
- 16 TTL Level Discrete Outputs
- 16 HLD Loopback Inputs
- 16 Discrete Ground/Open Outputs

I/O Controller

- Altera 1K series FPGA with embedded IP PCI core for main processor communications

Voltage Monitor

- 8-Channel, 10-Bit ADC for monitoring power supply secondary voltages

cPCI Interface

- Conforms to PICMG 2.0 R2.1 for a Target board

Memory Area

- 128 k Words of SRAM and 256 k Words of Flash memory

Versatile Microprocessor

- Texas Instruments TMS5402
- Microcode-based design for flexible support of unique customer protocols

Software Programming

- DSP and FPGA configuration data stored in Flash memory

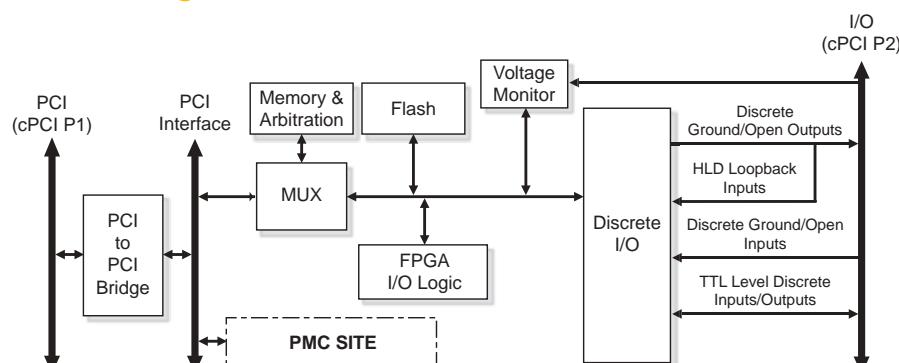


DIO4-cPCI-CC provides a highly versatile interface between the cPCI bus and DSP-Based inputs and outputs. Typical signal handling capabilities include Discrete Ground/Open outputs, High Level Discrete (HLD) Loopback inputs, and TTL level inputs and outputs. For added versatility, the card also includes a PCI Mezzanine Card Interface (PMC site). The ability to handle a wide variety of signals, perform on-the-fly signal processing, together with its conduction cooled temperature range makes the DIO4-cPCI-CC ideal for use in mission computers and other applications with harsh environmental demands.

DSP program code and FPGA configuration data can be downloaded and stored in FLASH memory via the host processor of the cPCI bus, allowing the card to combine the functionality of several individual speciality cards, saving precious backplane slots and the additional power, weight, and cooling requirements associated with those extra slots.

Signals move between the P1 connector on the PCI data bus, and external devices on the P2 connector, via a series of interfaces including a PCI-to-PCI Bridge, PCI interface, MUX, and a DSP core.

Simplified Block Diagram of DIO4-cPCI-CC Card



The module receives input power from the power supply via the cPCI bus. A secondary voltage of +5 V is standard, and optional voltages of +3.3 V, +12 V, and -12 V supplied either from the backplane or generated onboard, are available. Discrete output interfaces include discrete ground/open outputs and general purpose TTL digital outputs. The DIO4 also provides HLD loopback inputs and includes an ADC for BIT monitoring of power supply secondary voltages.



DIO4-cPCI-CC

Configurations

Specifications

Form Factor

- 3U cPCI

**Designed in Accordance
with IEEE 1101.2 and VITA
30.1**

Electrical Interfaces

- 24 Discrete Ground/Open Inputs 0 to 28 V
- 16 TTL Level Discrete Inputs
- 16 HLD Loopback Inputs
- 16 Discrete Ground/Open Outputs
- 16 TTL Level Discrete Outputs
- 1 cPCI interface - conforms to requirements of PICMG 2.0 R2.1 for Target board

DIO I/O and Control Functions - J1

Data Bus

- 32 Bit cPCI

DIO I/O and Control Functions - J2 I/O

- Input and output flexibility provided via software programmability and configurable biasing circuitry

Input Power

- 5 VDC standard
- 3.3 VDC, +12 VDC, and -12 VDC optional on backplane or onboard

I/O Connectors

- Per IEC 61076-4-101

Model Number

DIO4-cPCI-CCAR0

Configuration

cPCI to DIO, Conduction Cooled

Power Requirements

- +5 Volts \pm 5% at 0.2 A maximum
- +3.3 Volts \pm 5% at 0.4 A maximum

Temperature

- Operating: -40° to 85° C
- Storage: -55° to +95° C

Humidity

- 5% to 95%, non-condensing

Weight

- Approximately 0.159 kg (0.35 lb.)

Dimensions

- 3U Euroboard, 100.0 mm x 160.0 mm

Vibration

- Random - 0.05 g²/Hz, 20-2,000 Hz for 1 hour on each axis
- Endurance - 0.06 g²/Hz for 3 hours on each axis

MTBF

- >70,000 hours

Conformal Coating

Quality Assurance

- Designed and tested to ISO-9001 certified procedures

Built-in Test Capability

- BIT monitoring for failure detection

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DIO4-cPCI-CC

DSP-Based Input/Output Module

Features

3U cPCI Conduction Cooled

PMC Mezzanine

- Supports a conduction cooled PMC module
- 32-bit 33 MHz

Inputs/Outputs

- 24 Discrete Ground/Open Inputs
0 to 28 V
- 16 TTL Level Discrete Inputs
- 16 TTL Level Discrete Outputs
- 16 HLD Loopback Inputs
- 16 Discrete Ground/Open Outputs

I/O Controller

- Altera 1K series FPGA with embedded IP PCI core for main processor communications

Voltage Monitor

- 8-Channel, 10-Bit ADC for monitoring power supply secondary voltages

cPCI Interface

- Conforms to PICMG 2.0 R2.1 for a Target board

Memory Area

- 128 k Words of SRAM and 256 k Words of Flash memory

Versatile Microprocessor

- Texas Instruments TMS5402
- Microcode-based design for flexible support of unique customer protocols

Software Programming

- DSP and FPGA configuration data stored in Flash memory

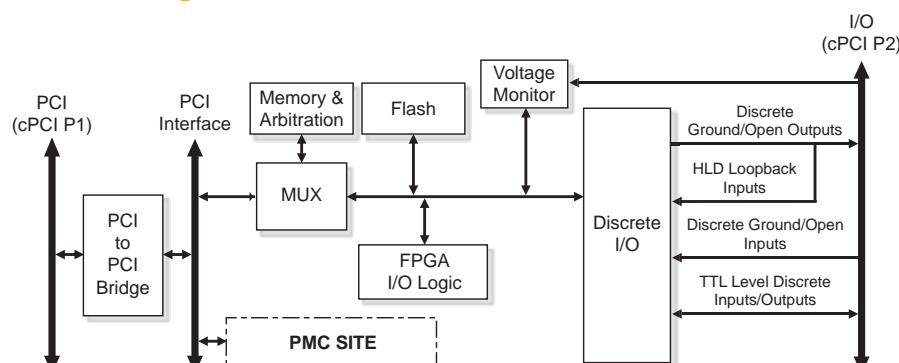


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DSP program code and FPGA configuration data can be downloaded and stored in FLASH memory via the host processor of the cPCI bus, allowing the card to combine the functionality of several individual speciality cards, saving precious backplane slots and the additional power, weight, and cooling requirements associated with those extra slots.

Signals move between the P1 connector on the PCI data bus, and external devices on the P2 connector, via a series of interfaces including a PCI-to-PCI Bridge, PCI interface, MUX, and a DSP core.

Simplified Block Diagram of DIO4-cPCI-CC Card



The module receives input power from the power supply via the cPCI bus. A secondary voltage of +5 V is standard, and optional voltages of +3.3 V, +12 V, and -12 V supplied either from the backplane or generated onboard, are available. Discrete output interfaces include discrete ground/open outputs and general purpose TTL digital outputs. The DIO4 also provides HLD loopback inputs and includes an ADC for BIT monitoring of power supply secondary voltages.



DIO4-cPCI-CC

Configurations

Specifications

Form Factor

- 3U cPCI

**Designed in Accordance
with IEEE 1101.2 and VITA
30.1**

Electrical Interfaces

- 24 Discrete Ground/Open Inputs 0 to 28 V
- 16 TTL Level Discrete Inputs
- 16 HLD Loopback Inputs
- 16 Discrete Ground/Open Outputs
- 16 TTL Level Discrete Outputs
- 1 cPCI interface - conforms to requirements of PICMG 2.0 R2.1 for Target board

DIO I/O and Control Functions - J1

Data Bus

- 32 Bit cPCI

DIO I/O and Control Functions - J2 I/O

- Input and output flexibility provided via software programmability and configurable biasing circuitry

Input Power

- 5 VDC standard
- 3.3 VDC, +12 VDC, and -12 VDC optional on backplane or onboard

I/O Connectors

- Per IEC 61076-4-101

Model Number

DIO4-cPCI-CCAR0

Configuration

cPCI to DIO, Conduction Cooled

Power Requirements

- +5 Volts \pm 5% at 0.2 A maximum
- +3.3 Volts \pm 5% at 0.4 A maximum

Temperature

- Operating: -40° to 85° C
- Storage: -55° to +95° C

Humidity

- 5% to 95%, non-condensing

Weight

- Approximately 0.159 kg (0.35 lb.)

Dimensions

- 3U Euroboard, 100.0 mm x 160.0 mm

Vibration

- Random - 0.05 g²/Hz, 20-2,000 Hz for 1 hour on each axis
- Endurance - 0.06 g²/Hz for 3 hours on each axis

MTBF

- >70,000 hours

Conformal Coating

Quality Assurance

- Designed and tested to ISO-9001 certified procedures

Built-in Test Capability

- BIT monitoring for failure detection

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DIO4-cPCI-CC

DSP-Based Input/Output Module

Features

3U cPCI Conduction Cooled

PMC Mezzanine

- Supports a conduction cooled PMC module
- 32-bit 33 MHz

Inputs/Outputs

- 24 Discrete Ground/Open Inputs 0 to 28 V
- 16 TTL Level Discrete Inputs
- 16 TTL Level Discrete Outputs
- 16 HLD Loopback Inputs
- 16 Discrete Ground/Open Outputs

I/O Controller

- Altera 1K series FPGA with embedded IP PCI core for main processor communications

Voltage Monitor

- 8-Channel, 10-Bit ADC for monitoring power supply secondary voltages

cPCI Interface

- Conforms to PICMG 2.0 R2.1 for a Target board

Memory Area

- 128 k Words of SRAM and 256 k Words of Flash memory

Versatile Microprocessor

- Texas Instruments TMS5402
- Microcode-based design for flexible support of unique customer protocols

Software Programming

- DSP and FPGA configuration data stored in Flash memory

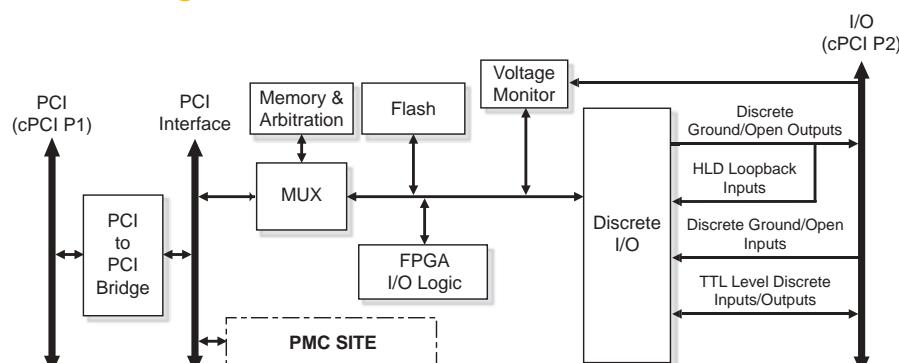


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DSP program code and FPGA configuration data can be downloaded and stored in FLASH memory via the host processor of the cPCI bus, allowing the card to combine the functionality of several individual speciality cards, saving precious backplane slots and the additional power, weight, and cooling requirements associated with those extra slots.

Signals move between the P1 connector on the PCI data bus, and external devices on the P2 connector, via a series of interfaces including a PCI-to-PCI Bridge, PCI interface, MUX, and a DSP core.

Simplified Block Diagram of DIO4-cPCI-CC Card



The module receives input power from the power supply via the cPCI bus. A secondary voltage of +5 V is standard, and optional voltages of +3.3 V, +12 V, and -12 V supplied either from the backplane or generated onboard, are available. Discrete output interfaces include discrete ground/open outputs and general purpose TTL digital outputs. The DIO4 also provides HLD loopback inputs and includes an ADC for BIT monitoring of power supply secondary voltages.



DIO4-cPCI-CC

Configurations

Specifications

Form Factor

- 3U cPCI

**Designed in Accordance
with IEEE 1101.2 and VITA
30.1**

Electrical Interfaces

- 24 Discrete Ground/Open Inputs 0 to 28 V
- 16 TTL Level Discrete Inputs
- 16 HLD Loopback Inputs
- 16 Discrete Ground/Open Outputs
- 16 TTL Level Discrete Outputs
- 1 cPCI interface - conforms to requirements of PICMG 2.0 R2.1 for Target board

DIO I/O and Control Functions - J1

Data Bus

- 32 Bit cPCI

DIO I/O and Control Functions - J2 I/O

- Input and output flexibility provided via software programmability and configurable biasing circuitry

Input Power

- 5 VDC standard
- 3.3 VDC, +12 VDC, and -12 VDC optional on backplane or onboard

I/O Connectors

- Per IEC 61076-4-101

Model Number

DIO4-cPCI-CCAR0

Configuration

cPCI to DIO, Conduction Cooled

Power Requirements

- +5 Volts \pm 5% at 0.2 A maximum
- +3.3 Volts \pm 5% at 0.4 A maximum

Temperature

- Operating: -40° to 85° C
- Storage: -55° to +95° C

Humidity

- 5% to 95%, non-condensing

Weight

- Approximately 0.159 kg (0.35 lb.)

Dimensions

- 3U Euroboard, 100.0 mm x 160.0 mm

Vibration

- Random - 0.05 g²/Hz, 20-2,000 Hz for 1 hour on each axis
- Endurance - 0.06 g²/Hz for 3 hours on each axis

MTBF

- >70,000 hours

Conformal Coating

Quality Assurance

- Designed and tested to ISO-9001 certified procedures

Built-in Test Capability

- BIT monitoring for failure detection

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DIO3-cPCI-CC

DSP-Based Input/Output Module

Features

3U cPCI Conduction Cooled

PMC Mezzanine

- Supports a conduction cooled PMC module
- 32-bit 33 MHz

Inputs/Outputs

- 32 0 to 28 Volt Discrete Inputs
- 4 Analog Frequency Inputs
- 11 High-Level Single Ended Analog Inputs
- 28 Low-Level Differential Analog Inputs
- 6 DC Programmable Analog Outputs -10 to +10 Volt
- 4 Excitation Outputs \pm 10 Volt
- 2 frequency gear sensor Inputs

I/O Controller

- Altera 1K series FPGA with embedded IP PCI core for main processor communications

Voltage Monitor

- 8-Channel, 10-Bit ADC for monitoring power supply secondary voltages

cPCI Interface

- Conforms to PICMG 2.0 R2.1 for a Target board

Memory Area

- 128 k Words of SRAM and 256 k Words of Flash memory

Versatile Microprocessor

- Texas Instruments TMS5402
- Microcode-based design for flexible support of unique protocols

Software Programming

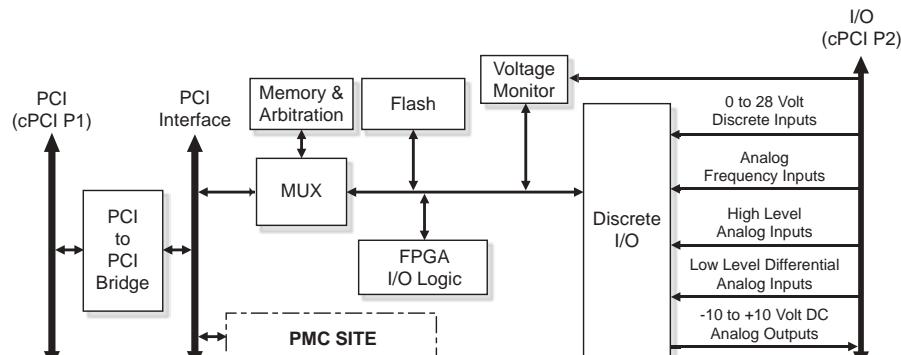
- DSP and FPGA configuration data stored in Flash memory



DIO3-cPCI-CC provides a highly versatile interface between the cPCI bus and DSP-Based inputs and outputs. Typical signal handling capabilities include Discrete Ground/Open outputs, Analog inputs, Gear Sensor inputs, and TTL level inputs and outputs. For added versatility, the card also includes a PCI Mezzanine Card Interface (PMC site). The ability to handle a wide variety of signals, perform on-the-fly signal processing, together with its conduction cooled temperature range makes the DIO3-cPCI-CC ideal for use in mission computers and other applications with harsh environmental demands.

DSP program code and FPGA configuration data can be downloaded and stored in FLASH memory via the host processor of the cPCI bus, allowing the card to combine the functionality of several individual speciality cards, saving precious backplane slots and the additional power, weight, and cooling requirements associated with those extra slots.

Signals move between the P1 connector on the PCI data bus, and external devices on the P2 connector, via a series of interfaces including a PCI-to-PCI Bridge, PCI interface, MUX, and a DSP core.



Simplified Block Diagram of DIO3-cPCI-CC Card

The module receives input power from the power supply via the cPCI bus. Secondary voltages of +5 V and +28 V are standard, and optional voltage of +3.3 V supplied either from the backplane or generated onboard, is available. Discrete output interfaces include bi-level optically coupled and bi-level and general purpose digital outputs. The DIO3 provides an excitation voltage output interface and includes an ADC for BIT monitoring of power supply secondary voltages.



DIO3-cPCI-CC

Configurations

Specifications

Form Factor

- 3U cPCI

Designed in Accordance with IEEE 1101.2 and VITA 30.1

Electrical Interfaces

- 32 Discrete Inputs 0 to 28 Volt
- 4 Analog Frequency Inputs
- 11 High-Level Single Ended Analog Inputs (5 to 20 Volts)
- 28 Low-Level Differential Analog Inputs
- 6 Programmable Analog Outputs -10 to +10 VDC
- Four Excitation Outputs \pm 10 Volt
- 2 Gear sensor Inputs
- 1 Analog Interface - 8-Channel 10-Bit ADC for monitoring the power supply secondary voltages
- 1 cPCI interface - conforms to requirements of PICMG 2.0 R2.1 for Target board

DIO I/O and Control Functions - J1 Data Bus

- 32 Bit cPCI

DIO I/O and Control Functions - J2 I/O

- Input and output flexibility provided via software programmability and configurable biasing circuitry

Model Number	Configuration
DIO3-cPCI-CCAR0	cPCI to DIO, Conduction Cooled

Input Power

- 5 VDC and 28 VDC standard
- 3.3 VDC optional on backplane, or onboard

MTBF

- >70,000 hours

I/O Connectors

- Per IEC 61076-4-101

Conformal Coating

Quality Assurance

- Designed and tested to ISO-9001 certified procedures

Built-in Test Capability

- BIT monitoring for failure detection

Power Requirements

- +5 Volts \pm 5% at 0.2 A maximum
- +3.3 Volts \pm 5% at 0.4 A maximum

Temperature

- Operating: -40° to 85° C
- Storage: -55° to +95° C

Humidity

- 5% to 95%, non-condensing

Weight

- Approximately 0.159 kg (0.35 lb.)

Dimensions

- 3U Euroboard, 100.0 mm x 160.0 mm

Vibration

- Random - 0.05 g²/Hz, 20-2,000 Hz for 1 hour on each axis
- Endurance - 0.06 g²/Hz for 3 hours on each axis

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DIO3-cPCI-CC

DSP-Based Input/Output Module

Features

3U cPCI Conduction Cooled

PMC Mezzanine

- Supports a conduction cooled PMC module
- 32-bit 33 MHz

Inputs/Outputs

- 32 0 to 28 Volt Discrete Inputs
- 4 Analog Frequency Inputs
- 11 High-Level Single Ended Analog Inputs
- 28 Low-Level Differential Analog Inputs
- 6 DC Programmable Analog Outputs -10 to +10 Volt
- 4 Excitation Outputs \pm 10 Volt
- 2 frequency gear sensor Inputs

I/O Controller

- Altera 1K series FPGA with embedded IP PCI core for main processor communications

Voltage Monitor

- 8-Channel, 10-Bit ADC for monitoring power supply secondary voltages

cPCI Interface

- Conforms to PICMG 2.0 R2.1 for a Target board

Memory Area

- 128 k Words of SRAM and
256 k Words of Flash memory

Versatile Microprocessor

- Texas Instruments TMS5402
- Microcode-based design for flexible support of unique protocols

Software Programming

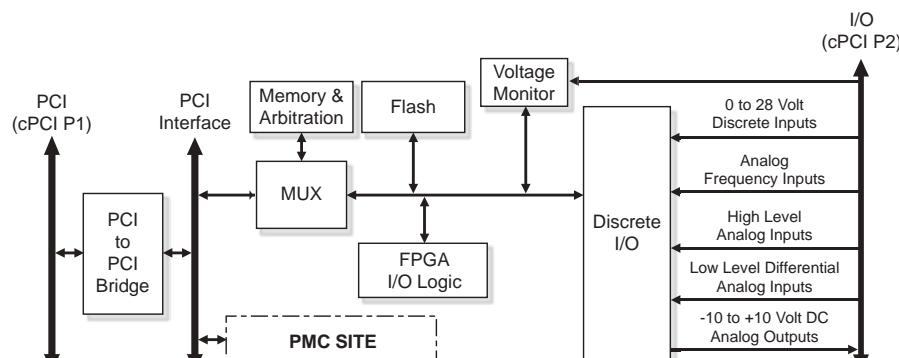
- DSP and FPGA configuration data stored in Flash memory



DIO3-cPCI-CC provides a highly versatile interface between the cPCI bus and DSP-Based inputs and outputs. Typical signal handling capabilities include Discrete Ground/Open outputs, Analog inputs, Gear Sensor inputs, and TTL level inputs and outputs. For added versatility, the card also includes a PCI Mezzanine Card Interface (PMC site). The ability to handle a wide variety of signals, perform on-the-fly signal processing, together with its conduction cooled temperature range makes the DIO3-cPCI-CC ideal for use in mission computers and other applications with harsh environmental demands.

DSP program code and FPGA configuration data can be downloaded and stored in FLASH memory via the host processor of the cPCI bus, allowing the card to combine the functionality of several individual speciality cards, saving precious backplane slots and the additional power, weight, and cooling requirements associated with those extra slots.

Signals move between the P1 connector on the PCI data bus, and external devices on the P2 connector, via a series of interfaces including a PCI-to-PCI Bridge, PCI interface, MUX, and a DSP core.



Simplified Block Diagram of DIO3-cPCI-CC Card

The module receives input power from the power supply via the cPCI bus. Secondary voltages of +5 V and +28 V are standard, and optional voltage of +3.3 V supplied either from the backplane or generated onboard, is available. Discrete output interfaces include bi-level optically coupled and bi-level and general purpose digital outputs. The DIO3 provides an excitation voltage output interface and includes an ADC for BIT monitoring of power supply secondary voltages.



DIO3-cPCI-CC

Configurations

Specifications

Form Factor

- 3U cPCI

Designed in Accordance with IEEE 1101.2 and VITA 30.1

Electrical Interfaces

- 32 Discrete Inputs 0 to 28 Volt
- 4 Analog Frequency Inputs
- 11 High-Level Single Ended Analog Inputs (5 to 20 Volts)
- 28 Low-Level Differential Analog Inputs
- 6 Programmable Analog Outputs -10 to +10 VDC
- Four Excitation Outputs \pm 10 Volt
- 2 Gear sensor Inputs
- 1 Analog Interface - 8-Channel 10-Bit ADC for monitoring the power supply secondary voltages
- 1 cPCI interface - conforms to requirements of PICMG 2.0 R2.1 for Target board

DIO I/O and Control Functions - J1 Data Bus

- 32 Bit cPCI

DIO I/O and Control Functions - J2 I/O

- Input and output flexibility provided via software programmability and configurable biasing circuitry

Model Number	Configuration
DIO3-cPCI-CCAR0	cPCI to DIO, Conduction Cooled

Input Power

- 5 VDC and 28 VDC standard
- 3.3 VDC optional on backplane, or onboard

MTBF

- >70,000 hours

I/O Connectors

- Per IEC 61076-4-101

Conformal Coating

Quality Assurance

- Designed and tested to ISO-9001 certified procedures

Built-in Test Capability

- BIT monitoring for failure detection

Power Requirements

- +5 Volts \pm 5% at 0.2 A maximum
- +3.3 Volts \pm 5% at 0.4 A maximum

Temperature

- Operating: -40° to 85° C
- Storage: -55° to +95° C

Humidity

- 5% to 95%, non-condensing

Weight

- Approximately 0.159 kg (0.35 lb.)

Dimensions

- 3U Euroboard, 100.0 mm x 160.0 mm

Vibration

- Random - 0.05 g²/Hz, 20-2,000 Hz for 1 hour on each axis
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DIO3-cPCI-CC

DSP-Based Input/Output Module

Features

3U cPCI Conduction Cooled

PMC Mezzanine

- Supports a conduction cooled PMC module
- 32-bit 33 MHz

Inputs/Outputs

- 32 0 to 28 Volt Discrete Inputs
- 4 Analog Frequency Inputs
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- 28 Low-Level Differential Analog Inputs
- 6 DC Programmable Analog Outputs -10 to +10 Volt
- 4 Excitation Outputs \pm 10 Volt
- 2 frequency gear sensor Inputs

I/O Controller

- Altera 1K series FPGA with embedded IP PCI core for main processor communications

Voltage Monitor

- 8-Channel, 10-Bit ADC for monitoring power supply secondary voltages

cPCI Interface

- Conforms to PICMG 2.0 R2.1 for a Target board

Memory Area

- 128 k Words of SRAM and
256 k Words of Flash memory

Versatile Microprocessor

- Texas Instruments TMS5402
- Microcode-based design for flexible support of unique protocols

Software Programming

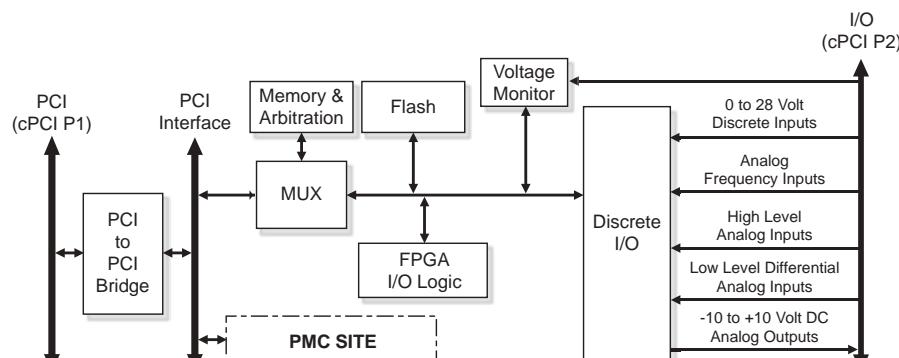
- DSP and FPGA configuration data stored in Flash memory



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DSP program code and FPGA configuration data can be downloaded and stored in FLASH memory via the host processor of the cPCI bus, allowing the card to combine the functionality of several individual speciality cards, saving precious backplane slots and the additional power, weight, and cooling requirements associated with those extra slots.

Signals move between the P1 connector on the PCI data bus, and external devices on the P2 connector, via a series of interfaces including a PCI-to-PCI Bridge, PCI interface, MUX, and a DSP core.



Simplified Block Diagram of DIO3-cPCI-CC Card

The module receives input power from the power supply via the cPCI bus. Secondary voltages of +5 V and +28 V are standard, and optional voltage of +3.3 V supplied either from the backplane or generated onboard, is available. Discrete output interfaces include bi-level optically coupled and bi-level and general purpose digital outputs. The DIO3 provides an excitation voltage output interface and includes an ADC for BIT monitoring of power supply secondary voltages.



DIO3-cPCI-CC

Configurations

Specifications

Form Factor

- 3U cPCI

Designed in Accordance with IEEE 1101.2 and VITA 30.1

Electrical Interfaces

- 32 Discrete Inputs 0 to 28 Volt
- 4 Analog Frequency Inputs
- 11 High-Level Single Ended Analog Inputs (5 to 20 Volts)
- 28 Low-Level Differential Analog Inputs
- 6 Programmable Analog Outputs -10 to +10 VDC
- Four Excitation Outputs \pm 10 Volt
- 2 Gear sensor Inputs
- 1 Analog Interface - 8-Channel 10-Bit ADC for monitoring the power supply secondary voltages
- 1 cPCI interface - conforms to requirements of PICMG 2.0 R2.1 for Target board

DIO I/O and Control Functions - J1 Data Bus

- 32 Bit cPCI

DIO I/O and Control Functions - J2 I/O

- Input and output flexibility provided via software programmability and configurable biasing circuitry

Model Number	Configuration
DIO3-cPCI-CCAR0	cPCI to DIO, Conduction Cooled

Input Power

- 5 VDC and 28 VDC standard
- 3.3 VDC optional on backplane, or onboard

MTBF

- >70,000 hours

I/O Connectors

- Per IEC 61076-4-101

Conformal Coating

Quality Assurance

- Designed and tested to ISO-9001 certified procedures

Built-in Test Capability

- BIT monitoring for failure detection

Power Requirements

- +5 Volts \pm 5% at 0.2 A maximum
- +3.3 Volts \pm 5% at 0.4 A maximum

Temperature

- Operating: -40° to 85° C
- Storage: -55° to +95° C

Humidity

- 5% to 95%, non-condensing

Weight

- Approximately 0.159 kg (0.35 lb.)

Dimensions

- 3U Euroboard, 100.0 mm x 160.0 mm

Vibration

- Random - 0.05 g²/Hz, 20-2,000 Hz for 1 hour on each axis
- Endurance - 0.06 g²/Hz for 3 hours on each axis

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DIO3-cPCI-CC

DSP-Based Input/Output Module

Features

3U cPCI Conduction Cooled

PMC Mezzanine

- Supports a conduction cooled PMC module
- 32-bit 33 MHz

Inputs/Outputs

- 32 0 to 28 Volt Discrete Inputs
- 4 Analog Frequency Inputs
- 11 High-Level Single Ended Analog Inputs
- 28 Low-Level Differential Analog Inputs
- 6 DC Programmable Analog Outputs -10 to +10 Volt
- 4 Excitation Outputs ±10 Volt
- 2 frequency gear sensor Inputs

I/O Controller

- Altera 1K series FPGA with embedded IP PCI core for main processor communications

Voltage Monitor

- 8-Channel, 10-Bit ADC for monitoring power supply secondary voltages

cPCI Interface

- Conforms to PICMG 2.0 R2.1 for a Target board

Memory Area

- 128 k Words of SRAM and 256 k Words of Flash memory

Versatile Microprocessor

- Texas Instruments TMS5402
- Microcode-based design for flexible support of unique protocols

Software Programming

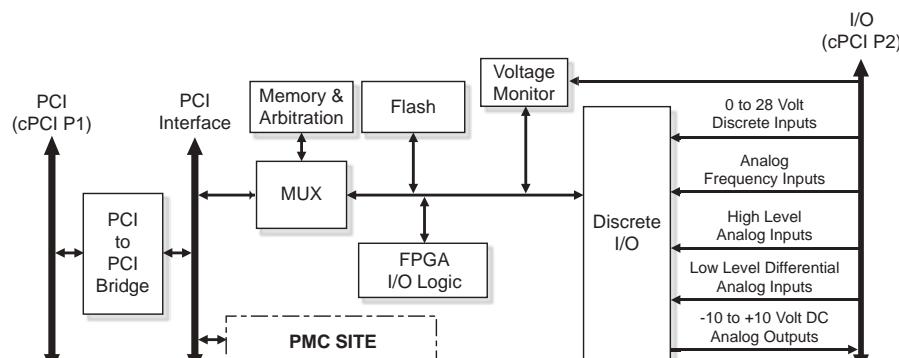
- DSP and FPGA configuration data stored in Flash memory



DIO3-cPCI-CC provides a highly versatile interface between the cPCI bus and DSP-Based inputs and outputs. Typical signal handling capabilities include Discrete Ground/Open outputs, Analog inputs, Gear Sensor inputs, and TTL level inputs and outputs. For added versatility, the card also includes a PCI Mezzanine Card Interface (PMC site). The ability to handle a wide variety of signals, perform on-the-fly signal processing, together with its conduction cooled temperature range makes the DIO3-cPCI-CC ideal for use in mission computers and other applications with harsh environmental demands.

DSP program code and FPGA configuration data can be downloaded and stored in FLASH memory via the host processor of the cPCI bus, allowing the card to combine the functionality of several individual speciality cards, saving precious backplane slots and the additional power, weight, and cooling requirements associated with those extra slots.

Signals move between the P1 connector on the PCI data bus, and external devices on the P2 connector, via a series of interfaces including a PCI-to-PCI Bridge, PCI interface, MUX, and a DSP core.



Simplified Block Diagram of DIO3-cPCI-CC Card

The module receives input power from the power supply via the cPCI bus. Secondary voltages of +5 V and +28 V are standard, and optional voltage of +3.3 V supplied either from the backplane or generated onboard, is available. Discrete output interfaces include bi-level optically coupled and bi-level and general purpose digital outputs. The DIO3 provides an excitation voltage output interface and includes an ADC for BIT monitoring of power supply secondary voltages.



DIO3-cPCI-CC

Configurations

Specifications

Form Factor

- 3U cPCI

Designed in Accordance with IEEE 1101.2 and VITA 30.1

Electrical Interfaces

- 32 Discrete Inputs 0 to 28 Volt
- 4 Analog Frequency Inputs
- 11 High-Level Single Ended Analog Inputs (5 to 20 Volts)
- 28 Low-Level Differential Analog Inputs
- 6 Programmable Analog Outputs -10 to +10 VDC
- Four Excitation Outputs \pm 10 Volt
- 2 Gear sensor Inputs
- 1 Analog Interface - 8-Channel 10-Bit ADC for monitoring the power supply secondary voltages
- 1 cPCI interface - conforms to requirements of PICMG 2.0 R2.1 for Target board

DIO I/O and Control Functions - J1 Data Bus

- 32 Bit cPCI

DIO I/O and Control Functions - J2 I/O

- Input and output flexibility provided via software programmability and configurable biasing circuitry

Model Number	Configuration
DIO3-cPCI-CCAR0	cPCI to DIO, Conduction Cooled

Input Power

- 5 VDC and 28 VDC standard
- 3.3 VDC optional on backplane, or onboard

MTBF

- >70,000 hours

I/O Connectors

- Per IEC 61076-4-101

Conformal Coating

Quality Assurance

- Designed and tested to ISO-9001 certified procedures

Built-in Test Capability

- BIT monitoring for failure detection

Power Requirements

- +5 Volts \pm 5% at 0.2 A maximum
- +3.3 Volts \pm 5% at 0.4 A maximum

Temperature

- Operating: -40° to 85° C
- Storage: -55° to +95° C

Humidity

- 5% to 95%, non-condensing

Weight

- Approximately 0.159 kg (0.35 lb.)

Dimensions

- 3U Euroboard, 100.0 mm x 160.0 mm

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DIO3-cPCI-CC

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Features

3U cPCI Conduction Cooled

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- Supports a conduction cooled PMC module
- 32-bit 33 MHz

Inputs/Outputs

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- 2 frequency gear sensor Inputs

I/O Controller

- Altera 1K series FPGA with embedded IP PCI core for main processor communications

Voltage Monitor

- 8-Channel, 10-Bit ADC for monitoring power supply secondary voltages

cPCI Interface

- Conforms to PICMG 2.0 R2.1 for a Target board

Memory Area

- 128 k Words of SRAM and
256 k Words of Flash memory

Versatile Microprocessor

- Texas Instruments TMS5402
- Microcode-based design for flexible support of unique protocols

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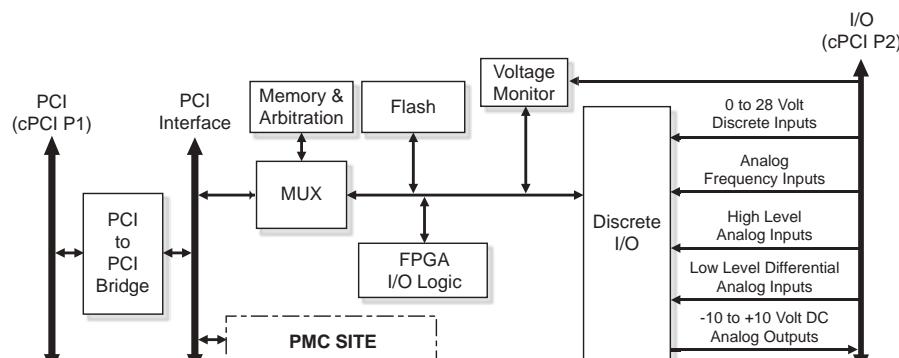
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Signals move between the P1 connector on the PCI data bus, and external devices on the P2 connector, via a series of interfaces including a PCI-to-PCI Bridge, PCI interface, MUX, and a DSP core.



Simplified Block Diagram of DIO3-cPCI-CC Card

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DIO3-cPCI-CC

Configurations

Specifications

Form Factor

- 3U cPCI

Designed in Accordance with IEEE 1101.2 and VITA 30.1

Electrical Interfaces

- 32 Discrete Inputs 0 to 28 Volt
- 4 Analog Frequency Inputs
- 11 High-Level Single Ended Analog Inputs (5 to 20 Volts)
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- 6 Programmable Analog Outputs -10 to +10 VDC
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- 1 Analog Interface - 8-Channel 10-Bit ADC for monitoring the power supply secondary voltages
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DIO I/O and Control Functions - J1 Data Bus

- 32 Bit cPCI

DIO I/O and Control Functions - J2 I/O

- Input and output flexibility provided via software programmability and configurable biasing circuitry

Model Number	Configuration
DIO3-cPCI-CCAR0	cPCI to DIO, Conduction Cooled

Input Power

- 5 VDC and 28 VDC standard
- 3.3 VDC optional on backplane, or onboard

MTBF

- >70,000 hours

I/O Connectors

- Per IEC 61076-4-101

Conformal Coating

Quality Assurance

- Designed and tested to ISO-9001 certified procedures

Built-in Test Capability

- BIT monitoring for failure detection

Power Requirements

- +5 Volts \pm 5% at 0.2 A maximum
- +3.3 Volts \pm 5% at 0.4 A maximum

Temperature

- Operating: -40° to 85° C
- Storage: -55° to +95° C

Humidity

- 5% to 95%, non-condensing

Weight

- Approximately 0.159 kg (0.35 lb.)

Dimensions

- 3U Euroboard, 100.0 mm x 160.0 mm

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DIO3-cPCI-CC

DSP-Based Input/Output Module

Features

3U cPCI Conduction Cooled

PMC Mezzanine

- Supports a conduction cooled PMC module
- 32-bit 33 MHz

Inputs/Outputs

- 32 0 to 28 Volt Discrete Inputs
- 4 Analog Frequency Inputs
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- 4 Excitation Outputs ±10 Volt
- 2 frequency gear sensor Inputs

I/O Controller

- Altera 1K series FPGA with embedded IP PCI core for main processor communications

Voltage Monitor

- 8-Channel, 10-Bit ADC for monitoring power supply secondary voltages

cPCI Interface

- Conforms to PICMG 2.0 R2.1 for a Target board

Memory Area

- 128 k Words of SRAM and 256 k Words of Flash memory

Versatile Microprocessor

- Texas Instruments TMS5402
- Microcode-based design for flexible support of unique protocols

Software Programming

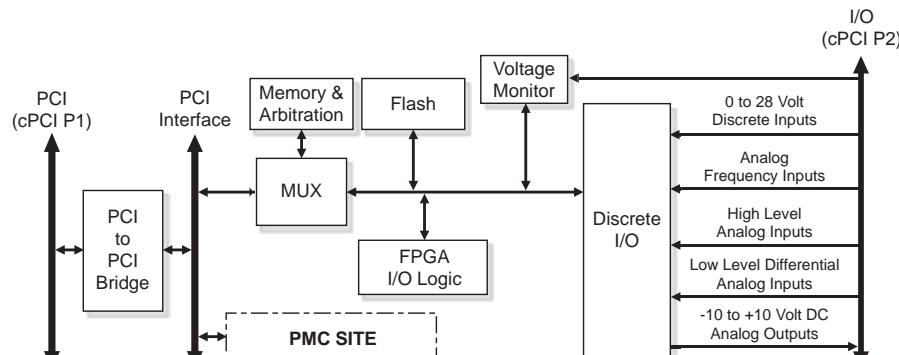
- DSP and FPGA configuration data stored in Flash memory



DIO3-cPCI-CC provides a highly versatile interface between the cPCI bus and DSP-Based inputs and outputs. Typical signal handling capabilities include Discrete Ground/Open outputs, Analog inputs, Gear Sensor inputs, and TTL level inputs and outputs. For added versatility, the card also includes a PCI Mezzanine Card Interface (PMC site). The ability to handle a wide variety of signals, perform on-the-fly signal processing, together with its conduction cooled temperature range makes the DIO3-cPCI-CC ideal for use in mission computers and other applications with harsh environmental demands.

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Signals move between the P1 connector on the PCI data bus, and external devices on the P2 connector, via a series of interfaces including a PCI-to-PCI Bridge, PCI interface, MUX, and a DSP core.



Simplified Block Diagram of DIO3-cPCI-CC Card

The module receives input power from the power supply via the cPCI bus. Secondary voltages of +5 V and +28 V are standard, and optional voltage of +3.3 V supplied either from the backplane or generated onboard, is available. Discrete output interfaces include bi-level optically coupled and bi-level and general purpose digital outputs. The DIO3 provides an excitation voltage output interface and includes an ADC for BIT monitoring of power supply secondary voltages.



DIO3-cPCI-CC

Configurations

Specifications

Form Factor

- 3U cPCI

Designed in Accordance with IEEE 1101.2 and VITA 30.1

Electrical Interfaces

- 32 Discrete Inputs 0 to 28 Volt
- 4 Analog Frequency Inputs
- 11 High-Level Single Ended Analog Inputs (5 to 20 Volts)
- 28 Low-Level Differential Analog Inputs
- 6 Programmable Analog Outputs -10 to +10 VDC
- Four Excitation Outputs \pm 10 Volt
- 2 Gear sensor Inputs
- 1 Analog Interface - 8-Channel 10-Bit ADC for monitoring the power supply secondary voltages
- 1 cPCI interface - conforms to requirements of PICMG 2.0 R2.1 for Target board

DIO I/O and Control Functions - J1 Data Bus

- 32 Bit cPCI

DIO I/O and Control Functions - J2 I/O

- Input and output flexibility provided via software programmability and configurable biasing circuitry

Model Number	Configuration
DIO3-cPCI-CCAR0	cPCI to DIO, Conduction Cooled

Input Power

- 5 VDC and 28 VDC standard
- 3.3 VDC optional on backplane, or onboard

MTBF

- >70,000 hours

I/O Connectors

- Per IEC 61076-4-101

Conformal Coating

Quality Assurance

- Designed and tested to ISO-9001 certified procedures

Built-in Test Capability

- BIT monitoring for failure detection

Power Requirements

- +5 Volts \pm 5% at 0.2 A maximum
- +3.3 Volts \pm 5% at 0.4 A maximum

Temperature

- Operating: -40° to 85° C
- Storage: -55° to +95° C

Humidity

- 5% to 95%, non-condensing

Weight

- Approximately 0.159 kg (0.35 lb.)

Dimensions

- 3U Euroboard, 100.0 mm x 160.0 mm

Vibration

- Random - 0.05 g²/Hz, 20-2,000 Hz for 1 hour on each axis
- Endurance - 0.06 g²/Hz for 3 hours on each axis

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DIO3-cPCI-CC

DSP-Based Input/Output Module

Features

3U cPCI Conduction Cooled

PMC Mezzanine

- Supports a conduction cooled PMC module
- 32-bit 33 MHz

Inputs/Outputs

- 32 0 to 28 Volt Discrete Inputs
- 4 Analog Frequency Inputs
- 11 High-Level Single Ended Analog Inputs
- 28 Low-Level Differential Analog Inputs
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- 2 frequency gear sensor Inputs

I/O Controller

- Altera 1K series FPGA with embedded IP PCI core for main processor communications

Voltage Monitor

- 8-Channel, 10-Bit ADC for monitoring power supply secondary voltages

cPCI Interface

- Conforms to PICMG 2.0 R2.1 for a Target board

Memory Area

- 128 k Words of SRAM and 256 k Words of Flash memory

Versatile Microprocessor

- Texas Instruments TMS5402
- Microcode-based design for flexible support of unique protocols

Software Programming

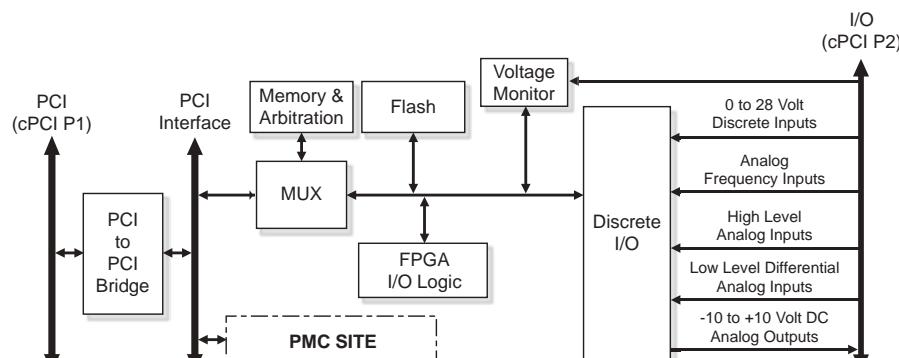
- DSP and FPGA configuration data stored in Flash memory



DIO3-cPCI-CC provides a highly versatile interface between the cPCI bus and DSP-Based inputs and outputs. Typical signal handling capabilities include Discrete Ground/Open outputs, Analog inputs, Gear Sensor inputs, and TTL level inputs and outputs. For added versatility, the card also includes a PCI Mezzanine Card Interface (PMC site). The ability to handle a wide variety of signals, perform on-the-fly signal processing, together with its conduction cooled temperature range makes the DIO3-cPCI-CC ideal for use in mission computers and other applications with harsh environmental demands.

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Signals move between the P1 connector on the PCI data bus, and external devices on the P2 connector, via a series of interfaces including a PCI-to-PCI Bridge, PCI interface, MUX, and a DSP core.



Simplified Block Diagram of DIO3-cPCI-CC Card

The module receives input power from the power supply via the cPCI bus. Secondary voltages of +5 V and +28 V are standard, and optional voltage of +3.3 V supplied either from the backplane or generated onboard, is available. Discrete output interfaces include bi-level optically coupled and bi-level and general purpose digital outputs. The DIO3 provides an excitation voltage output interface and includes an ADC for BIT monitoring of power supply secondary voltages.



DIO3-cPCI-CC

Configurations

Specifications

Form Factor

- 3U cPCI

Designed in Accordance with IEEE 1101.2 and VITA 30.1

Electrical Interfaces

- 32 Discrete Inputs 0 to 28 Volt
- 4 Analog Frequency Inputs
- 11 High-Level Single Ended Analog Inputs (5 to 20 Volts)
- 28 Low-Level Differential Analog Inputs
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- 2 Gear sensor Inputs
- 1 Analog Interface - 8-Channel 10-Bit ADC for monitoring the power supply secondary voltages
- 1 cPCI interface - conforms to requirements of PICMG 2.0 R2.1 for Target board

DIO I/O and Control Functions - J1 Data Bus

- 32 Bit cPCI

DIO I/O and Control Functions - J2 I/O

- Input and output flexibility provided via software programmability and configurable biasing circuitry

Model Number	Configuration
DIO3-cPCI-CCAR0	cPCI to DIO, Conduction Cooled

Input Power

- 5 VDC and 28 VDC standard
- 3.3 VDC optional on backplane, or onboard

MTBF

- >70,000 hours

I/O Connectors

- Per IEC 61076-4-101

Conformal Coating

Quality Assurance

- Designed and tested to ISO-9001 certified procedures

Built-in Test Capability

- BIT monitoring for failure detection

Power Requirements

- +5 Volts \pm 5% at 0.2 A maximum
- +3.3 Volts \pm 5% at 0.4 A maximum

Temperature

- Operating: -40° to 85° C
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Humidity

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Weight

- Approximately 0.159 kg (0.35 lb.)

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DIO3-cPCI-CC

DSP-Based Input/Output Module

Features

3U cPCI Conduction Cooled

PMC Mezzanine

- Supports a conduction cooled PMC module
- 32-bit 33 MHz

Inputs/Outputs

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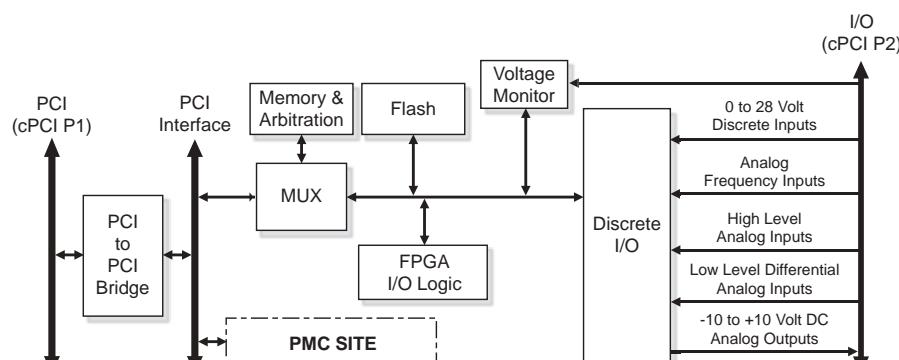
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DIO3-cPCI-CC

Configurations

Specifications

Form Factor

- 3U cPCI

Designed in Accordance with IEEE 1101.2 and VITA 30.1

Electrical Interfaces

- 32 Discrete Inputs 0 to 28 Volt
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DIO I/O and Control Functions - J1 Data Bus

- 32 Bit cPCI

DIO I/O and Control Functions - J2 I/O

- Input and output flexibility provided via software programmability and configurable biasing circuitry

Model Number	Configuration
DIO3-cPCI-CCAR0	cPCI to DIO, Conduction Cooled

Input Power

- 5 VDC and 28 VDC standard
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MTBF

- >70,000 hours

I/O Connectors

- Per IEC 61076-4-101

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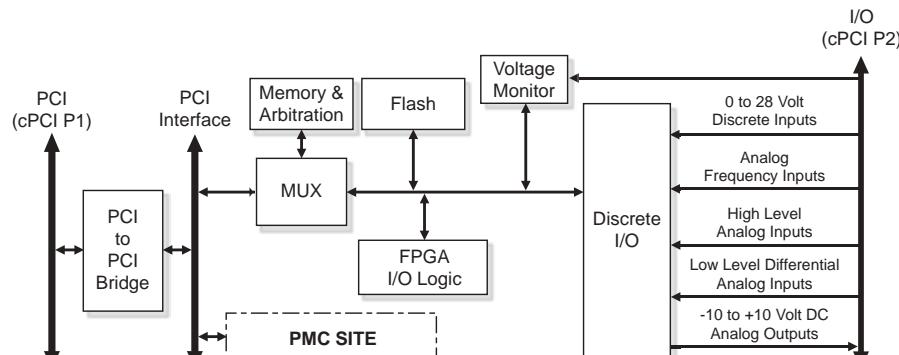
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Signals move between the P1 connector on the PCI data bus, and external devices on the P2 connector, via a series of interfaces including a PCI-to-PCI Bridge, PCI interface, MUX, and a DSP core.



Simplified Block Diagram of DIO3-cPCI-CC Card

The module receives input power from the power supply via the cPCI bus. Secondary voltages of +5 V and +28 V are standard, and optional voltage of +3.3 V supplied either from the backplane or generated onboard, is available. Discrete output interfaces include bi-level optically coupled and bi-level and general purpose digital outputs. The DIO3 provides an excitation voltage output interface and includes an ADC for BIT monitoring of power supply secondary voltages.



DIO3-cPCI-CC

Configurations

Specifications

Form Factor

- 3U cPCI

Designed in Accordance with IEEE 1101.2 and VITA 30.1

Electrical Interfaces

- 32 Discrete Inputs 0 to 28 Volt
- 4 Analog Frequency Inputs
- 11 High-Level Single Ended Analog Inputs (5 to 20 Volts)
- 28 Low-Level Differential Analog Inputs
- 6 Programmable Analog Outputs -10 to +10 VDC
- Four Excitation Outputs \pm 10 Volt
- 2 Gear sensor Inputs
- 1 Analog Interface - 8-Channel 10-Bit ADC for monitoring the power supply secondary voltages
- 1 cPCI interface - conforms to requirements of PICMG 2.0 R2.1 for Target board

DIO I/O and Control Functions - J1 Data Bus

- 32 Bit cPCI

DIO I/O and Control Functions - J2 I/O

- Input and output flexibility provided via software programmability and configurable biasing circuitry

Model Number	Configuration
DIO3-cPCI-CCAR0	cPCI to DIO, Conduction Cooled

Input Power

- 5 VDC and 28 VDC standard
- 3.3 VDC optional on backplane, or onboard

MTBF

- >70,000 hours

I/O Connectors

- Per IEC 61076-4-101

Conformal Coating

Quality Assurance

- Designed and tested to ISO-9001 certified procedures

Built-in Test Capability

- BIT monitoring for failure detection

Power Requirements

- +5 Volts \pm 5% at 0.2 A maximum
- +3.3 Volts \pm 5% at 0.4 A maximum

Temperature

- Operating: -40° to 85° C
- Storage: -55° to +95° C

Humidity

- 5% to 95%, non-condensing

Weight

- Approximately 0.159 kg (0.35 lb.)

Dimensions

- 3U Euroboard, 100.0 mm x 160.0 mm

Vibration

- Random - 0.05 g²/Hz, 20-2,000 Hz for 1 hour on each axis
- Endurance - 0.06 g²/Hz for 3 hours on each axis

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DIO3-cPCI-CC

DSP-Based Input/Output Module

Features

3U cPCI Conduction Cooled

PMC Mezzanine

- Supports a conduction cooled PMC module
- 32-bit 33 MHz

Inputs/Outputs

- 32 0 to 28 Volt Discrete Inputs
- 4 Analog Frequency Inputs
- 11 High-Level Single Ended Analog Inputs
- 28 Low-Level Differential Analog Inputs
- 6 DC Programmable Analog Outputs -10 to +10 Volt
- 4 Excitation Outputs \pm 10 Volt
- 2 frequency gear sensor Inputs

I/O Controller

- Altera 1K series FPGA with embedded IP PCI core for main processor communications

Voltage Monitor

- 8-Channel, 10-Bit ADC for monitoring power supply secondary voltages

cPCI Interface

- Conforms to PICMG 2.0 R2.1 for a Target board

Memory Area

- 128 k Words of SRAM and
256 k Words of Flash memory

Versatile Microprocessor

- Texas Instruments TMS5402
- Microcode-based design for flexible support of unique protocols

Software Programming

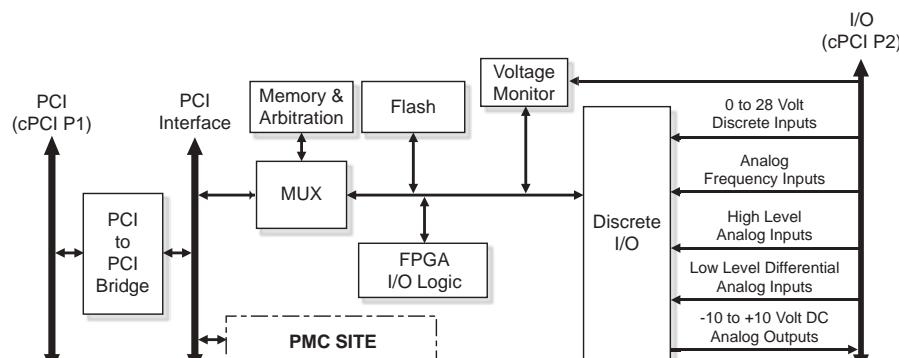
- DSP and FPGA configuration data stored in Flash memory



DIO3-cPCI-CC provides a highly versatile interface between the cPCI bus and DSP-Based inputs and outputs. Typical signal handling capabilities include Discrete Ground/Open outputs, Analog inputs, Gear Sensor inputs, and TTL level inputs and outputs. For added versatility, the card also includes a PCI Mezzanine Card Interface (PMC site). The ability to handle a wide variety of signals, perform on-the-fly signal processing, together with its conduction cooled temperature range makes the DIO3-cPCI-CC ideal for use in mission computers and other applications with harsh environmental demands.

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Signals move between the P1 connector on the PCI data bus, and external devices on the P2 connector, via a series of interfaces including a PCI-to-PCI Bridge, PCI interface, MUX, and a DSP core.



Simplified Block Diagram of DIO3-cPCI-CC Card

The module receives input power from the power supply via the cPCI bus. Secondary voltages of +5 V and +28 V are standard, and optional voltage of +3.3 V supplied either from the backplane or generated onboard, is available. Discrete output interfaces include bi-level optically coupled and bi-level and general purpose digital outputs. The DIO3 provides an excitation voltage output interface and includes an ADC for BIT monitoring of power supply secondary voltages.



DIO3-cPCI-CC

Configurations

Specifications

Form Factor

- 3U cPCI

Designed in Accordance with IEEE 1101.2 and VITA 30.1

Electrical Interfaces

- 32 Discrete Inputs 0 to 28 Volt
- 4 Analog Frequency Inputs
- 11 High-Level Single Ended Analog Inputs (5 to 20 Volts)
- 28 Low-Level Differential Analog Inputs
- 6 Programmable Analog Outputs -10 to +10 VDC
- Four Excitation Outputs \pm 10 Volt
- 2 Gear sensor Inputs
- 1 Analog Interface - 8-Channel 10-Bit ADC for monitoring the power supply secondary voltages
- 1 cPCI interface - conforms to requirements of PICMG 2.0 R2.1 for Target board

DIO I/O and Control Functions - J1 Data Bus

- 32 Bit cPCI

DIO I/O and Control Functions - J2 I/O

- Input and output flexibility provided via software programmability and configurable biasing circuitry

Model Number	Configuration
DIO3-cPCI-CCAR0	cPCI to DIO, Conduction Cooled

Input Power

- 5 VDC and 28 VDC standard
- 3.3 VDC optional on backplane, or onboard

MTBF

- >70,000 hours

I/O Connectors

- Per IEC 61076-4-101

Conformal Coating

Quality Assurance

- Designed and tested to ISO-9001 certified procedures

Built-in Test Capability

- BIT monitoring for failure detection

Power Requirements

- +5 Volts \pm 5% at 0.2 A maximum
- +3.3 Volts \pm 5% at 0.4 A maximum

Temperature

- Operating: -40° to 85° C
- Storage: -55° to +95° C

Humidity

- 5% to 95%, non-condensing

Weight

- Approximately 0.159 kg (0.35 lb.)

Dimensions

- 3U Euroboard, 100.0 mm x 160.0 mm

Vibration

- Random - 0.05 g²/Hz, 20-2,000 Hz for 1 hour on each axis
- Endurance - 0.06 g²/Hz for 3 hours on each axis

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DIO3-cPCI-CC

DSP-Based Input/Output Module

Features

3U cPCI Conduction Cooled

PMC Mezzanine

- Supports a conduction cooled PMC module
- 32-bit 33 MHz

Inputs/Outputs

- 32 0 to 28 Volt Discrete Inputs
- 4 Analog Frequency Inputs
- 11 High-Level Single Ended Analog Inputs
- 28 Low-Level Differential Analog Inputs
- 6 DC Programmable Analog Outputs -10 to +10 Volt
- 4 Excitation Outputs \pm 10 Volt
- 2 frequency gear sensor Inputs

I/O Controller

- Altera 1K series FPGA with embedded IP PCI core for main processor communications

Voltage Monitor

- 8-Channel, 10-Bit ADC for monitoring power supply secondary voltages

cPCI Interface

- Conforms to PICMG 2.0 R2.1 for a Target board

Memory Area

- 128 k Words of SRAM and
256 k Words of Flash memory

Versatile Microprocessor

- Texas Instruments TMS5402
- Microcode-based design for flexible support of unique protocols

Software Programming

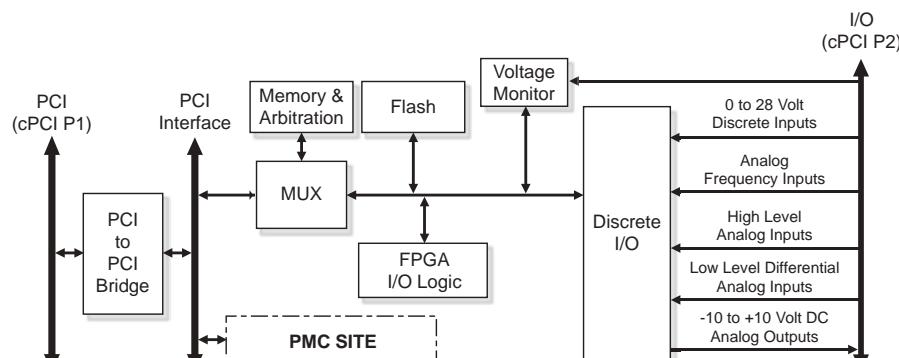
- DSP and FPGA configuration data stored in Flash memory



DIO3-cPCI-CC provides a highly versatile interface between the cPCI bus and DSP-Based inputs and outputs. Typical signal handling capabilities include Discrete Ground/Open outputs, Analog inputs, Gear Sensor inputs, and TTL level inputs and outputs. For added versatility, the card also includes a PCI Mezzanine Card Interface (PMC site). The ability to handle a wide variety of signals, perform on-the-fly signal processing, together with its conduction cooled temperature range makes the DIO3-cPCI-CC ideal for use in mission computers and other applications with harsh environmental demands.

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Signals move between the P1 connector on the PCI data bus, and external devices on the P2 connector, via a series of interfaces including a PCI-to-PCI Bridge, PCI interface, MUX, and a DSP core.



Simplified Block Diagram of DIO3-cPCI-CC Card

The module receives input power from the power supply via the cPCI bus. Secondary voltages of +5 V and +28 V are standard, and optional voltage of +3.3 V supplied either from the backplane or generated onboard, is available. Discrete output interfaces include bi-level optically coupled and bi-level and general purpose digital outputs. The DIO3 provides an excitation voltage output interface and includes an ADC for BIT monitoring of power supply secondary voltages.



DIO3-cPCI-CC

Configurations

Specifications

Form Factor

- 3U cPCI

Designed in Accordance with IEEE 1101.2 and VITA 30.1

Electrical Interfaces

- 32 Discrete Inputs 0 to 28 Volt
- 4 Analog Frequency Inputs
- 11 High-Level Single Ended Analog Inputs (5 to 20 Volts)
- 28 Low-Level Differential Analog Inputs
- 6 Programmable Analog Outputs -10 to +10 VDC
- Four Excitation Outputs \pm 10 Volt
- 2 Gear sensor Inputs
- 1 Analog Interface - 8-Channel 10-Bit ADC for monitoring the power supply secondary voltages
- 1 cPCI interface - conforms to requirements of PICMG 2.0 R2.1 for Target board

DIO I/O and Control Functions - J1 Data Bus

- 32 Bit cPCI

DIO I/O and Control Functions - J2 I/O

- Input and output flexibility provided via software programmability and configurable biasing circuitry

Model Number	Configuration
DIO3-cPCI-CCAR0	cPCI to DIO, Conduction Cooled

Input Power

- 5 VDC and 28 VDC standard
- 3.3 VDC optional on backplane, or onboard

MTBF

- >70,000 hours

I/O Connectors

- Per IEC 61076-4-101

Conformal Coating

Quality Assurance

- Designed and tested to ISO-9001 certified procedures

Built-in Test Capability

- BIT monitoring for failure detection

Power Requirements

- +5 Volts \pm 5% at 0.2 A maximum
- +3.3 Volts \pm 5% at 0.4 A maximum

Temperature

- Operating: -40° to 85° C
- Storage: -55° to +95° C

Humidity

- 5% to 95%, non-condensing

Weight

- Approximately 0.159 kg (0.35 lb.)

Dimensions

- 3U Euroboard, 100.0 mm x 160.0 mm

Vibration

- Random - 0.05 g²/Hz, 20-2,000 Hz for 1 hour on each axis
- Endurance - 0.06 g²/Hz for 3 hours on each axis

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DIO3-cPCI-CC

DSP-Based Input/Output Module

Features

3U cPCI Conduction Cooled

PMC Mezzanine

- Supports a conduction cooled PMC module
- 32-bit 33 MHz

Inputs/Outputs

- 32 0 to 28 Volt Discrete Inputs
- 4 Analog Frequency Inputs
- 11 High-Level Single Ended Analog Inputs
- 28 Low-Level Differential Analog Inputs
- 6 DC Programmable Analog Outputs -10 to +10 Volt
- 4 Excitation Outputs \pm 10 Volt
- 2 frequency gear sensor Inputs

I/O Controller

- Altera 1K series FPGA with embedded IP PCI core for main processor communications

Voltage Monitor

- 8-Channel, 10-Bit ADC for monitoring power supply secondary voltages

cPCI Interface

- Conforms to PICMG 2.0 R2.1 for a Target board

Memory Area

- 128 k Words of SRAM and 256 k Words of Flash memory

Versatile Microprocessor

- Texas Instruments TMS5402
- Microcode-based design for flexible support of unique protocols

Software Programming

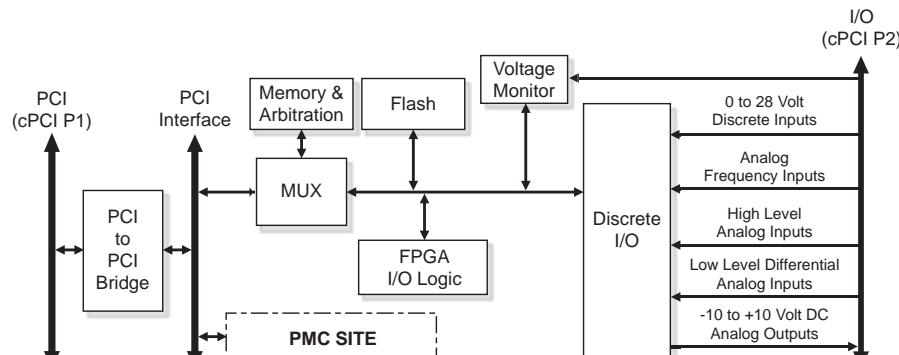
- DSP and FPGA configuration data stored in Flash memory



DIO3-cPCI-CC provides a highly versatile interface between the cPCI bus and DSP-Based inputs and outputs. Typical signal handling capabilities include Discrete Ground/Open outputs, Analog inputs, Gear Sensor inputs, and TTL level inputs and outputs. For added versatility, the card also includes a PCI Mezzanine Card Interface (PMC site). The ability to handle a wide variety of signals, perform on-the-fly signal processing, together with its conduction cooled temperature range makes the DIO3-cPCI-CC ideal for use in mission computers and other applications with harsh environmental demands.

DSP program code and FPGA configuration data can be downloaded and stored in FLASH memory via the host processor of the cPCI bus, allowing the card to combine the functionality of several individual speciality cards, saving precious backplane slots and the additional power, weight, and cooling requirements associated with those extra slots.

Signals move between the P1 connector on the PCI data bus, and external devices on the P2 connector, via a series of interfaces including a PCI-to-PCI Bridge, PCI interface, MUX, and a DSP core.



Simplified Block Diagram of DIO3-cPCI-CC Card

The module receives input power from the power supply via the cPCI bus. Secondary voltages of +5 V and +28 V are standard, and optional voltage of +3.3 V supplied either from the backplane or generated onboard, is available. Discrete output interfaces include bi-level optically coupled and bi-level and general purpose digital outputs. The DIO3 provides an excitation voltage output interface and includes an ADC for BIT monitoring of power supply secondary voltages.



DIO3-cPCI-CC

Configurations

Specifications

Form Factor

- 3U cPCI

Designed in Accordance with IEEE 1101.2 and VITA 30.1

Electrical Interfaces

- 32 Discrete Inputs 0 to 28 Volt
- 4 Analog Frequency Inputs
- 11 High-Level Single Ended Analog Inputs (5 to 20 Volts)
- 28 Low-Level Differential Analog Inputs
- 6 Programmable Analog Outputs -10 to +10 VDC
- Four Excitation Outputs \pm 10 Volt
- 2 Gear sensor Inputs
- 1 Analog Interface - 8-Channel 10-Bit ADC for monitoring the power supply secondary voltages
- 1 cPCI interface - conforms to requirements of PICMG 2.0 R2.1 for Target board

DIO I/O and Control Functions - J1 Data Bus

- 32 Bit cPCI

DIO I/O and Control Functions - J2 I/O

- Input and output flexibility provided via software programmability and configurable biasing circuitry

Model Number	Configuration
DIO3-cPCI-CCAR0	cPCI to DIO, Conduction Cooled

Input Power

- 5 VDC and 28 VDC standard
- 3.3 VDC optional on backplane, or onboard

MTBF

- >70,000 hours

I/O Connectors

- Per IEC 61076-4-101

Conformal Coating

Quality Assurance

- Designed and tested to ISO-9001 certified procedures

Built-in Test Capability

- BIT monitoring for failure detection

Power Requirements

- +5 Volts \pm 5% at 0.2 A maximum
- +3.3 Volts \pm 5% at 0.4 A maximum

Temperature

- Operating: -40° to 85° C
- Storage: -55° to +95° C

Humidity

- 5% to 95%, non-condensing

Weight

- Approximately 0.159 kg (0.35 lb.)

Dimensions

- 3U Euroboard, 100.0 mm x 160.0 mm

Vibration

- Random - 0.05 g²/Hz, 20-2,000 Hz for 1 hour on each axis
- Endurance - 0.06 g²/Hz for 3 hours on each axis

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DIO3-cPCI-CC

DSP-Based Input/Output Module

Features

3U cPCI Conduction Cooled

PMC Mezzanine

- Supports a conduction cooled PMC module
- 32-bit 33 MHz

Inputs/Outputs

- 32 0 to 28 Volt Discrete Inputs
- 4 Analog Frequency Inputs
- 11 High-Level Single Ended Analog Inputs
- 28 Low-Level Differential Analog Inputs
- 6 DC Programmable Analog Outputs -10 to +10 Volt
- 4 Excitation Outputs \pm 10 Volt
- 2 frequency gear sensor Inputs

I/O Controller

- Altera 1K series FPGA with embedded IP PCI core for main processor communications

Voltage Monitor

- 8-Channel, 10-Bit ADC for monitoring power supply secondary voltages

cPCI Interface

- Conforms to PICMG 2.0 R2.1 for a Target board

Memory Area

- 128 k Words of SRAM and
256 k Words of Flash memory

Versatile Microprocessor

- Texas Instruments TMS5402
- Microcode-based design for flexible support of unique protocols

Software Programming

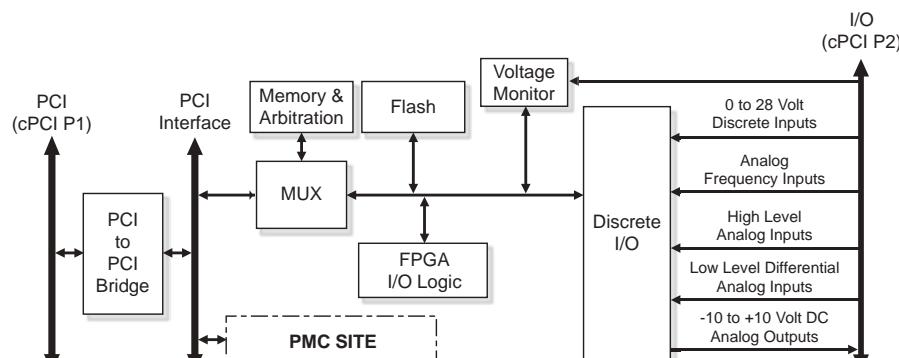
- DSP and FPGA configuration data stored in Flash memory



DIO3-cPCI-CC provides a highly versatile interface between the cPCI bus and DSP-Based inputs and outputs. Typical signal handling capabilities include Discrete Ground/Open outputs, Analog inputs, Gear Sensor inputs, and TTL level inputs and outputs. For added versatility, the card also includes a PCI Mezzanine Card Interface (PMC site). The ability to handle a wide variety of signals, perform on-the-fly signal processing, together with its conduction cooled temperature range makes the DIO3-cPCI-CC ideal for use in mission computers and other applications with harsh environmental demands.

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Signals move between the P1 connector on the PCI data bus, and external devices on the P2 connector, via a series of interfaces including a PCI-to-PCI Bridge, PCI interface, MUX, and a DSP core.



Simplified Block Diagram of DIO3-cPCI-CC Card

The module receives input power from the power supply via the cPCI bus. Secondary voltages of +5 V and +28 V are standard, and optional voltage of +3.3 V supplied either from the backplane or generated onboard, is available. Discrete output interfaces include bi-level optically coupled and bi-level and general purpose digital outputs. The DIO3 provides an excitation voltage output interface and includes an ADC for BIT monitoring of power supply secondary voltages.



DIO3-cPCI-CC

Configurations

Specifications

Form Factor

- 3U cPCI

**Designed in Accordance
with IEEE 1101.2 and VITA
30.1**

Electrical Interfaces

- 32 Discrete Inputs 0 to 28 Volt
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DIO I/O and Control Functions - J1 Data Bus

- 32 Bit cPCI

DIO I/O and Control Functions - J2 I/O

- Input and output flexibility provided via software programmability and configurable biasing circuitry

Model Number	Configuration
DIO3-cPCI-CCAR0	cPCI to DIO, Conduction Cooled

Input Power

- 5 VDC and 28 VDC standard
- 3.3 VDC optional on backplane, or onboard

MTBF

- >70,000 hours

I/O Connectors

- Per IEC 61076-4-101

Conformal Coating

Quality Assurance

- Designed and tested to ISO-9001 certified procedures

Built-in Test Capability

- BIT monitoring for failure detection

Power Requirements

- +5 Volts \pm 5% at 0.2 A maximum
- +3.3 Volts \pm 5% at 0.4 A maximum

Temperature

- Operating: -40° to 85° C
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Humidity

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Weight

- Approximately 0.159 kg (0.35 lb.)

Dimensions

- 3U Euroboard, 100.0 mm x 160.0 mm

Vibration

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DIO3-cPCI-CC

DSP-Based Input/Output Module

Features

3U cPCI Conduction Cooled

PMC Mezzanine

- Supports a conduction cooled PMC module
- 32-bit 33 MHz

Inputs/Outputs

- 32 0 to 28 Volt Discrete Inputs
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I/O Controller

- Altera 1K series FPGA with embedded IP PCI core for main processor communications

Voltage Monitor

- 8-Channel, 10-Bit ADC for monitoring power supply secondary voltages

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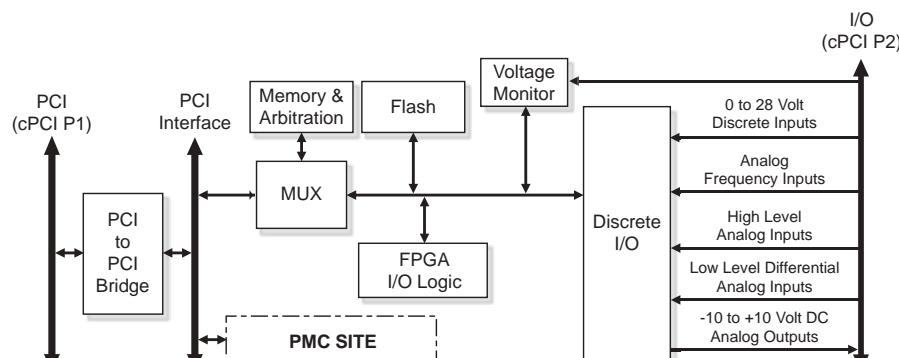
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Simplified Block Diagram of DIO3-cPCI-CC Card

The module receives input power from the power supply via the cPCI bus. Secondary voltages of +5 V and +28 V are standard, and optional voltage of +3.3 V supplied either from the backplane or generated onboard, is available. Discrete output interfaces include bi-level optically coupled and bi-level and general purpose digital outputs. The DIO3 provides an excitation voltage output interface and includes an ADC for BIT monitoring of power supply secondary voltages.



DIO3-cPCI-CC

Configurations

Specifications

Form Factor

- 3U cPCI

**Designed in Accordance
with IEEE 1101.2 and VITA
30.1**

Electrical Interfaces

- 32 Discrete Inputs 0 to 28 Volt
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- 1 Analog Interface - 8-Channel 10-Bit ADC for monitoring the power supply secondary voltages
- 1 cPCI interface - conforms to requirements of PICMG 2.0 R2.1 for Target board

DIO I/O and Control Functions - J1 Data Bus

- 32 Bit cPCI

DIO I/O and Control Functions - J2 I/O

- Input and output flexibility provided via software programmability and configurable biasing circuitry

Model Number	Configuration
DIO3-cPCI-CCAR0	cPCI to DIO, Conduction Cooled

Input Power

- 5 VDC and 28 VDC standard
- 3.3 VDC optional on backplane, or onboard

MTBF

- >70,000 hours

I/O Connectors

- Per IEC 61076-4-101

Conformal Coating

Quality Assurance

- Designed and tested to ISO-9001 certified procedures

Built-in Test Capability

- BIT monitoring for failure detection

Power Requirements

- +5 Volts \pm 5% at 0.2 A maximum
- +3.3 Volts \pm 5% at 0.4 A maximum

Temperature

- Operating: -40° to 85° C
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DIO3-cPCI-CC

DSP-Based Input/Output Module

Features

3U cPCI Conduction Cooled

PMC Mezzanine

- Supports a conduction cooled PMC module
- 32-bit 33 MHz

Inputs/Outputs

- 32 0 to 28 Volt Discrete Inputs
- 4 Analog Frequency Inputs
- 11 High-Level Single Ended Analog Inputs
- 28 Low-Level Differential Analog Inputs
- 6 DC Programmable Analog Outputs -10 to +10 Volt
- 4 Excitation Outputs \pm 10 Volt
- 2 frequency gear sensor Inputs

I/O Controller

- Altera 1K series FPGA with embedded IP PCI core for main processor communications

Voltage Monitor

- 8-Channel, 10-Bit ADC for monitoring power supply secondary voltages

cPCI Interface

- Conforms to PICMG 2.0 R2.1 for a Target board

Memory Area

- 128 k Words of SRAM and 256 k Words of Flash memory

Versatile Microprocessor

- Texas Instruments TMS5402
- Microcode-based design for flexible support of unique protocols

Software Programming

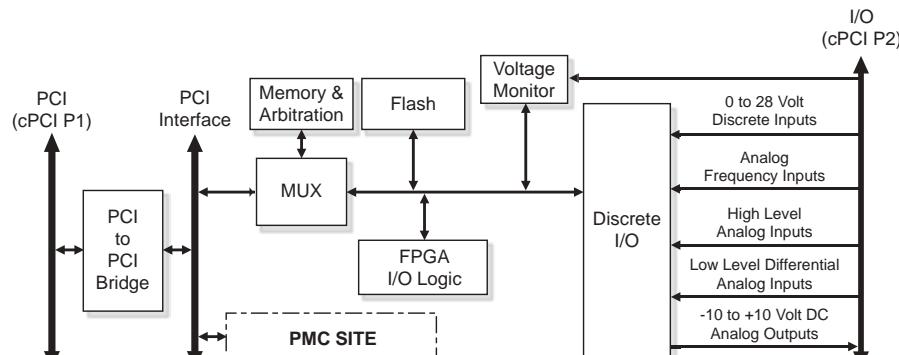
- DSP and FPGA configuration data stored in Flash memory



DIO3-cPCI-CC provides a highly versatile interface between the cPCI bus and DSP-Based inputs and outputs. Typical signal handling capabilities include Discrete Ground/Open outputs, Analog inputs, Gear Sensor inputs, and TTL level inputs and outputs. For added versatility, the card also includes a PCI Mezzanine Card Interface (PMC site). The ability to handle a wide variety of signals, perform on-the-fly signal processing, together with its conduction cooled temperature range makes the DIO3-cPCI-CC ideal for use in mission computers and other applications with harsh environmental demands.

DSP program code and FPGA configuration data can be downloaded and stored in FLASH memory via the host processor of the cPCI bus, allowing the card to combine the functionality of several individual speciality cards, saving precious backplane slots and the additional power, weight, and cooling requirements associated with those extra slots.

Signals move between the P1 connector on the PCI data bus, and external devices on the P2 connector, via a series of interfaces including a PCI-to-PCI Bridge, PCI interface, MUX, and a DSP core.



Simplified Block Diagram of DIO3-cPCI-CC Card

The module receives input power from the power supply via the cPCI bus. Secondary voltages of +5 V and +28 V are standard, and optional voltage of +3.3 V supplied either from the backplane or generated onboard, is available. Discrete output interfaces include bi-level optically coupled and bi-level and general purpose digital outputs. The DIO3 provides an excitation voltage output interface and includes an ADC for BIT monitoring of power supply secondary voltages.



DIO3-cPCI-CC

Configurations

Specifications

Form Factor

- 3U cPCI

Designed in Accordance with IEEE 1101.2 and VITA 30.1

Electrical Interfaces

- 32 Discrete Inputs 0 to 28 Volt
- 4 Analog Frequency Inputs
- 11 High-Level Single Ended Analog Inputs (5 to 20 Volts)
- 28 Low-Level Differential Analog Inputs
- 6 Programmable Analog Outputs -10 to +10 VDC
- Four Excitation Outputs \pm 10 Volt
- 2 Gear sensor Inputs
- 1 Analog Interface - 8-Channel 10-Bit ADC for monitoring the power supply secondary voltages
- 1 cPCI interface - conforms to requirements of PICMG 2.0 R2.1 for Target board

DIO I/O and Control Functions - J1 Data Bus

- 32 Bit cPCI

DIO I/O and Control Functions - J2 I/O

- Input and output flexibility provided via software programmability and configurable biasing circuitry

Model Number	Configuration
DIO3-cPCI-CCAR0	cPCI to DIO, Conduction Cooled

Input Power

- 5 VDC and 28 VDC standard
- 3.3 VDC optional on backplane, or onboard

MTBF

- >70,000 hours

I/O Connectors

- Per IEC 61076-4-101

Conformal Coating

Quality Assurance

- Designed and tested to ISO-9001 certified procedures

Built-in Test Capability

- BIT monitoring for failure detection

Power Requirements

- +5 Volts \pm 5% at 0.2 A maximum
- +3.3 Volts \pm 5% at 0.4 A maximum

Temperature

- Operating: -40° to 85° C
- Storage: -55° to +95° C

Humidity

- 5% to 95%, non-condensing

Weight

- Approximately 0.159 kg (0.35 lb.)

Dimensions

- 3U Euroboard, 100.0 mm x 160.0 mm

Vibration

- Random - 0.05 g²/Hz, 20-2,000 Hz for 1 hour on each axis
- Endurance - 0.06 g²/Hz for 3 hours on each axis

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Voltage Monitor

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cPCI Interface

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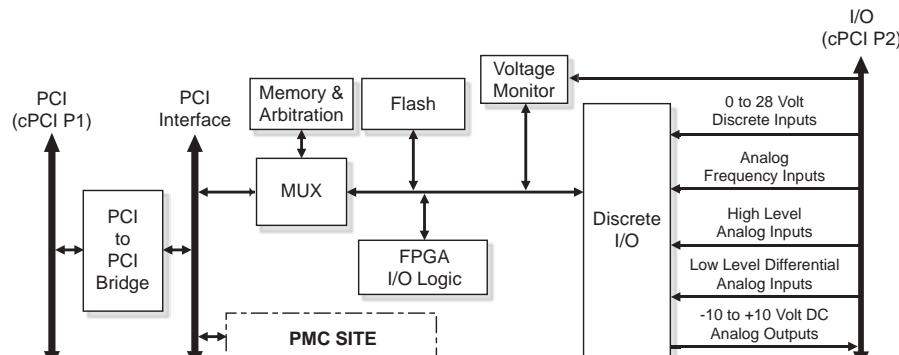
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DIO3-cPCI-CC

Configurations

Specifications

Form Factor

- 3U cPCI

Designed in Accordance with IEEE 1101.2 and VITA 30.1

Electrical Interfaces

- 32 Discrete Inputs 0 to 28 Volt
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DIO I/O and Control Functions - J1 Data Bus

- 32 Bit cPCI

DIO I/O and Control Functions - J2 I/O

- Input and output flexibility provided via software programmability and configurable biasing circuitry

Model Number	Configuration
DIO3-cPCI-CCAR0	cPCI to DIO, Conduction Cooled

Input Power

- 5 VDC and 28 VDC standard
- 3.3 VDC optional on backplane, or onboard

MTBF

- >70,000 hours

I/O Connectors

- Per IEC 61076-4-101

Conformal Coating

Quality Assurance

- Designed and tested to ISO-9001 certified procedures

Built-in Test Capability

- BIT monitoring for failure detection

Power Requirements

- +5 Volts \pm 5% at 0.2 A maximum
- +3.3 Volts \pm 5% at 0.4 A maximum

Temperature

- Operating: -40° to 85° C
- Storage: -55° to +95° C

Humidity

- 5% to 95%, non-condensing

Weight

- Approximately 0.159 kg (0.35 lb.)

Dimensions

- 3U Euroboard, 100.0 mm x 160.0 mm

Vibration

- Random - 0.05 g²/Hz, 20-2,000 Hz for 1 hour on each axis
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Voltage Monitor

- 8-Channel, 10-Bit ADC for monitoring power supply secondary voltages

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- 128 k Words of SRAM and 256 k Words of Flash memory

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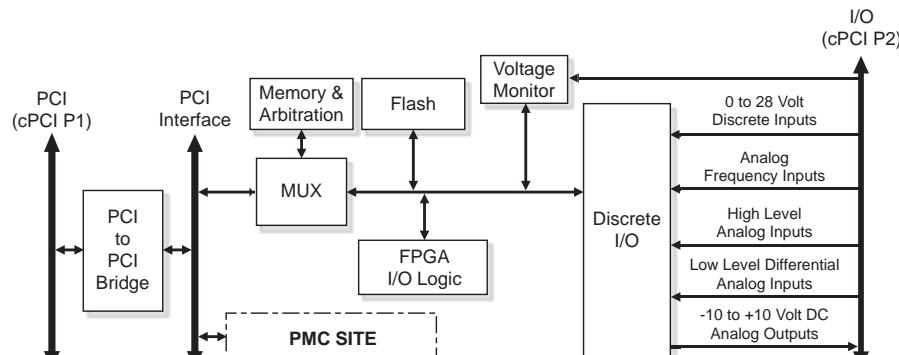
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Simplified Block Diagram of DIO3-cPCI-CC Card

The module receives input power from the power supply via the cPCI bus. Secondary voltages of +5 V and +28 V are standard, and optional voltage of +3.3 V supplied either from the backplane or generated onboard, is available. Discrete output interfaces include bi-level optically coupled and bi-level and general purpose digital outputs. The DIO3 provides an excitation voltage output interface and includes an ADC for BIT monitoring of power supply secondary voltages.



DIO3-cPCI-CC

Configurations

Specifications

Form Factor

- 3U cPCI

Designed in Accordance with IEEE 1101.2 and VITA 30.1

Electrical Interfaces

- 32 Discrete Inputs 0 to 28 Volt
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- 11 High-Level Single Ended Analog Inputs (5 to 20 Volts)
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- 1 Analog Interface - 8-Channel 10-Bit ADC for monitoring the power supply secondary voltages
- 1 cPCI interface - conforms to requirements of PICMG 2.0 R2.1 for Target board

DIO I/O and Control Functions - J1 Data Bus

- 32 Bit cPCI

DIO I/O and Control Functions - J2 I/O

- Input and output flexibility provided via software programmability and configurable biasing circuitry

Model Number	Configuration
DIO3-cPCI-CCAR0	cPCI to DIO, Conduction Cooled

Input Power

- 5 VDC and 28 VDC standard
- 3.3 VDC optional on backplane, or onboard

MTBF

- >70,000 hours

I/O Connectors

- Per IEC 61076-4-101

Conformal Coating

Quality Assurance

- Designed and tested to ISO-9001 certified procedures

Built-in Test Capability

- BIT monitoring for failure detection

Power Requirements

- +5 Volts \pm 5% at 0.2 A maximum
- +3.3 Volts \pm 5% at 0.4 A maximum

Temperature

- Operating: -40° to 85° C
- Storage: -55° to +95° C

Humidity

- 5% to 95%, non-condensing

Weight

- Approximately 0.159 kg (0.35 lb.)

Dimensions

- 3U Euroboard, 100.0 mm x 160.0 mm

Vibration

- Random - 0.05 g²/Hz, 20-2,000 Hz for 1 hour on each axis
- Endurance - 0.06 g²/Hz for 3 hours on each axis

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DIO3-cPCI-CC

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Features

3U cPCI Conduction Cooled

PMC Mezzanine

- Supports a conduction cooled PMC module
- 32-bit 33 MHz

Inputs/Outputs

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- 2 frequency gear sensor Inputs

I/O Controller

- Altera 1K series FPGA with embedded IP PCI core for main processor communications

Voltage Monitor

- 8-Channel, 10-Bit ADC for monitoring power supply secondary voltages

cPCI Interface

- Conforms to PICMG 2.0 R2.1 for a Target board

Memory Area

- 128 k Words of SRAM and 256 k Words of Flash memory

Versatile Microprocessor

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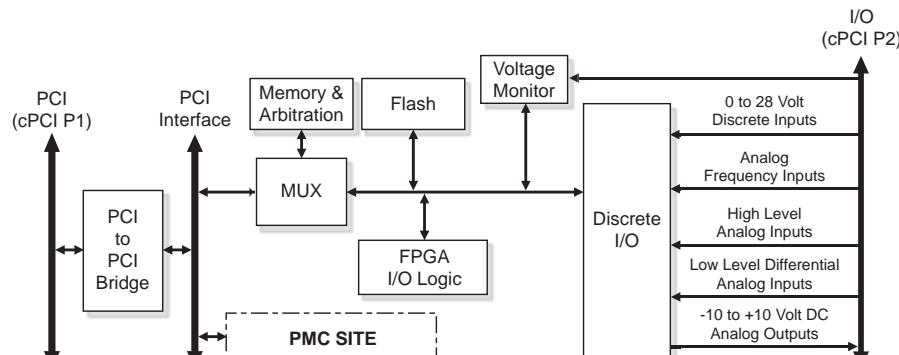
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DIO3-cPCI-CC provides a highly versatile interface between the cPCI bus and DSP-Based inputs and outputs. Typical signal handling capabilities include Discrete Ground/Open outputs, Analog inputs, Gear Sensor inputs, and TTL level inputs and outputs. For added versatility, the card also includes a PCI Mezzanine Card Interface (PMC site). The ability to handle a wide variety of signals, perform on-the-fly signal processing, together with its conduction cooled temperature range makes the DIO3-cPCI-CC ideal for use in mission computers and other applications with harsh environmental demands.

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Signals move between the P1 connector on the PCI data bus, and external devices on the P2 connector, via a series of interfaces including a PCI-to-PCI Bridge, PCI interface, MUX, and a DSP core.



Simplified Block Diagram of DIO3-cPCI-CC Card

The module receives input power from the power supply via the cPCI bus. Secondary voltages of +5 V and +28 V are standard, and optional voltage of +3.3 V supplied either from the backplane or generated onboard, is available. Discrete output interfaces include bi-level optically coupled and bi-level and general purpose digital outputs. The DIO3 provides an excitation voltage output interface and includes an ADC for BIT monitoring of power supply secondary voltages.



DIO3-cPCI-CC

Configurations

Specifications

Form Factor

- 3U cPCI

Designed in Accordance with IEEE 1101.2 and VITA 30.1

Electrical Interfaces

- 32 Discrete Inputs 0 to 28 Volt
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DIO I/O and Control Functions - J1 Data Bus

- 32 Bit cPCI

DIO I/O and Control Functions - J2 I/O

- Input and output flexibility provided via software programmability and configurable biasing circuitry

Model Number	Configuration
DIO3-cPCI-CCAR0	cPCI to DIO, Conduction Cooled

Input Power

- 5 VDC and 28 VDC standard
- 3.3 VDC optional on backplane, or onboard

MTBF

- >70,000 hours

I/O Connectors

- Per IEC 61076-4-101

Conformal Coating

Quality Assurance

- Designed and tested to ISO-9001 certified procedures

Built-in Test Capability

- BIT monitoring for failure detection

Power Requirements

- +5 Volts \pm 5% at 0.2 A maximum
- +3.3 Volts \pm 5% at 0.4 A maximum

Temperature

- Operating: -40° to 85° C
- Storage: -55° to +95° C

Humidity

- 5% to 95%, non-condensing

Weight

- Approximately 0.159 kg (0.35 lb.)

Dimensions

- 3U Euroboard, 100.0 mm x 160.0 mm

Vibration

- Random - 0.05 g²/Hz, 20-2,000 Hz for 1 hour on each axis
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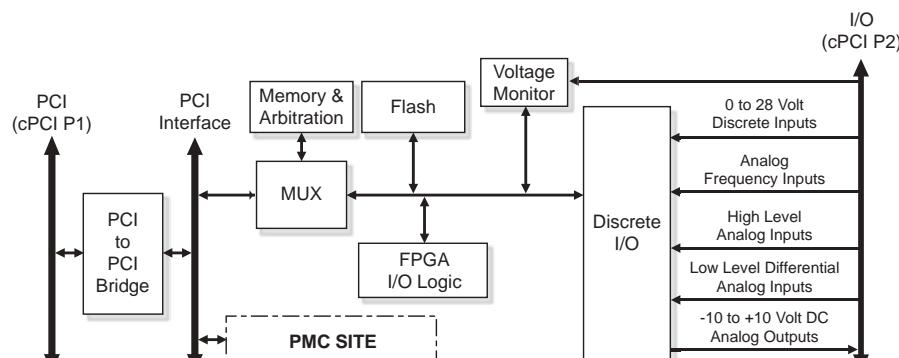
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DIO3-cPCI-CC

Configurations

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Model Number	Configuration
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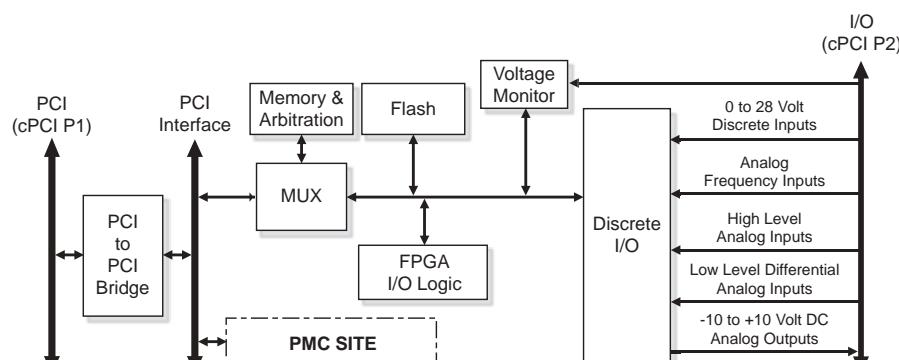
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Configurations

Specifications

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Electrical Interfaces

- 32 Discrete Inputs 0 to 28 Volt
- 4 Analog Frequency Inputs
- 11 High-Level Single Ended Analog Inputs (5 to 20 Volts)
- 28 Low-Level Differential Analog Inputs
- 6 Programmable Analog Outputs -10 to +10 VDC
- Four Excitation Outputs \pm 10 Volt
- 2 Gear sensor Inputs
- 1 Analog Interface - 8-Channel 10-Bit ADC for monitoring the power supply secondary voltages
- 1 cPCI interface - conforms to requirements of PICMG 2.0 R2.1 for Target board

DIO I/O and Control Functions - J1 Data Bus

- 32 Bit cPCI

DIO I/O and Control Functions - J2 I/O

- Input and output flexibility provided via software programmability and configurable biasing circuitry

Model Number	Configuration
DIO3-cPCI-CCAR0	cPCI to DIO, Conduction Cooled

Input Power

- 5 VDC and 28 VDC standard
- 3.3 VDC optional on backplane, or onboard

MTBF

- >70,000 hours

I/O Connectors

- Per IEC 61076-4-101

Conformal Coating

Quality Assurance

- Designed and tested to ISO-9001 certified procedures

Built-in Test Capability

- BIT monitoring for failure detection

Power Requirements

- +5 Volts \pm 5% at 0.2 A maximum
- +3.3 Volts \pm 5% at 0.4 A maximum

Temperature

- Operating: -40° to 85° C
- Storage: -55° to +95° C

Humidity

- 5% to 95%, non-condensing

Weight

- Approximately 0.159 kg (0.35 lb.)

Dimensions

- 3U Euroboard, 100.0 mm x 160.0 mm

Vibration

- Random - 0.05 g²/Hz, 20-2,000 Hz for 1 hour on each axis
- Endurance - 0.06 g²/Hz for 3 hours on each axis

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DIO3-cPCI-CC

DSP-Based Input/Output Module

Features

3U cPCI Conduction Cooled

PMC Mezzanine

- Supports a conduction cooled PMC module
- 32-bit 33 MHz

Inputs/Outputs

- 32 0 to 28 Volt Discrete Inputs
- 4 Analog Frequency Inputs
- 11 High-Level Single Ended Analog Inputs
- 28 Low-Level Differential Analog Inputs
- 6 DC Programmable Analog Outputs -10 to +10 Volt
- 4 Excitation Outputs \pm 10 Volt
- 2 frequency gear sensor Inputs

I/O Controller

- Altera 1K series FPGA with embedded IP PCI core for main processor communications

Voltage Monitor

- 8-Channel, 10-Bit ADC for monitoring power supply secondary voltages

cPCI Interface

- Conforms to PICMG 2.0 R2.1 for a Target board

Memory Area

- 128 k Words of SRAM and 256 k Words of Flash memory

Versatile Microprocessor

- Texas Instruments TMS5402
- Microcode-based design for flexible support of unique protocols

Software Programming

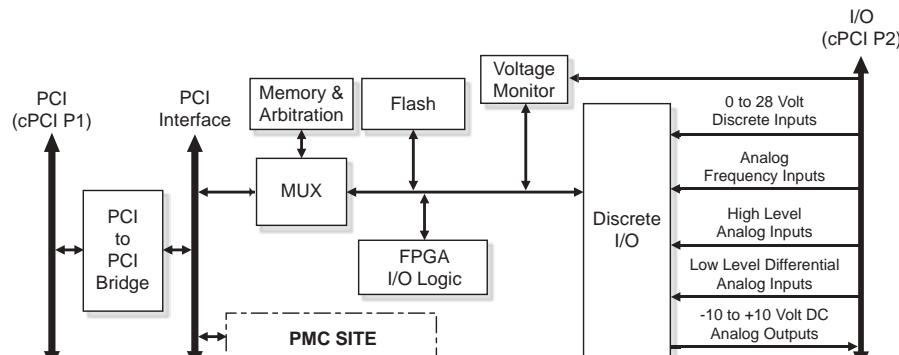
- DSP and FPGA configuration data stored in Flash memory



DIO3-cPCI-CC provides a highly versatile interface between the cPCI bus and DSP-Based inputs and outputs. Typical signal handling capabilities include Discrete Ground/Open outputs, Analog inputs, Gear Sensor inputs, and TTL level inputs and outputs. For added versatility, the card also includes a PCI Mezzanine Card Interface (PMC site). The ability to handle a wide variety of signals, perform on-the-fly signal processing, together with its conduction cooled temperature range makes the DIO3-cPCI-CC ideal for use in mission computers and other applications with harsh environmental demands.

DSP program code and FPGA configuration data can be downloaded and stored in FLASH memory via the host processor of the cPCI bus, allowing the card to combine the functionality of several individual speciality cards, saving precious backplane slots and the additional power, weight, and cooling requirements associated with those extra slots.

Signals move between the P1 connector on the PCI data bus, and external devices on the P2 connector, via a series of interfaces including a PCI-to-PCI Bridge, PCI interface, MUX, and a DSP core.



Simplified Block Diagram of DIO3-cPCI-CC Card

The module receives input power from the power supply via the cPCI bus. Secondary voltages of +5 V and +28 V are standard, and optional voltage of +3.3 V supplied either from the backplane or generated onboard, is available. Discrete output interfaces include bi-level optically coupled and bi-level and general purpose digital outputs. The DIO3 provides an excitation voltage output interface and includes an ADC for BIT monitoring of power supply secondary voltages.



DIO3-cPCI-CC

Configurations

Specifications

Form Factor

- 3U cPCI

Designed in Accordance with IEEE 1101.2 and VITA 30.1

Electrical Interfaces

- 32 Discrete Inputs 0 to 28 Volt
- 4 Analog Frequency Inputs
- 11 High-Level Single Ended Analog Inputs (5 to 20 Volts)
- 28 Low-Level Differential Analog Inputs
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- 1 cPCI interface - conforms to requirements of PICMG 2.0 R2.1 for Target board

DIO I/O and Control Functions - J1 Data Bus

- 32 Bit cPCI

DIO I/O and Control Functions - J2 I/O

- Input and output flexibility provided via software programmability and configurable biasing circuitry

Model Number	Configuration
DIO3-cPCI-CCAR0	cPCI to DIO, Conduction Cooled

Input Power

- 5 VDC and 28 VDC standard
- 3.3 VDC optional on backplane, or onboard

MTBF

- >70,000 hours

I/O Connectors

- Per IEC 61076-4-101

Conformal Coating

Quality Assurance

- Designed and tested to ISO-9001 certified procedures

Built-in Test Capability

- BIT monitoring for failure detection

Power Requirements

- +5 Volts \pm 5% at 0.2 A maximum
- +3.3 Volts \pm 5% at 0.4 A maximum

Temperature

- Operating: -40° to 85° C
- Storage: -55° to +95° C

Humidity

- 5% to 95%, non-condensing

Weight

- Approximately 0.159 kg (0.35 lb.)

Dimensions

- 3U Euroboard, 100.0 mm x 160.0 mm

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- Random - 0.05 g²/Hz, 20-2,000 Hz for 1 hour on each axis
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DIO3-cPCI-CC

DSP-Based Input/Output Module

Features

3U cPCI Conduction Cooled

PMC Mezzanine

- Supports a conduction cooled PMC module
- 32-bit 33 MHz

Inputs/Outputs

- 32 0 to 28 Volt Discrete Inputs
- 4 Analog Frequency Inputs
- 11 High-Level Single Ended Analog Inputs
- 28 Low-Level Differential Analog Inputs
- 6 DC Programmable Analog Outputs -10 to +10 Volt
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- 2 frequency gear sensor Inputs

I/O Controller

- Altera 1K series FPGA with embedded IP PCI core for main processor communications

Voltage Monitor

- 8-Channel, 10-Bit ADC for monitoring power supply secondary voltages

cPCI Interface

- Conforms to PICMG 2.0 R2.1 for a Target board

Memory Area

- 128 k Words of SRAM and 256 k Words of Flash memory

Versatile Microprocessor

- Texas Instruments TMS5402
- Microcode-based design for flexible support of unique protocols

Software Programming

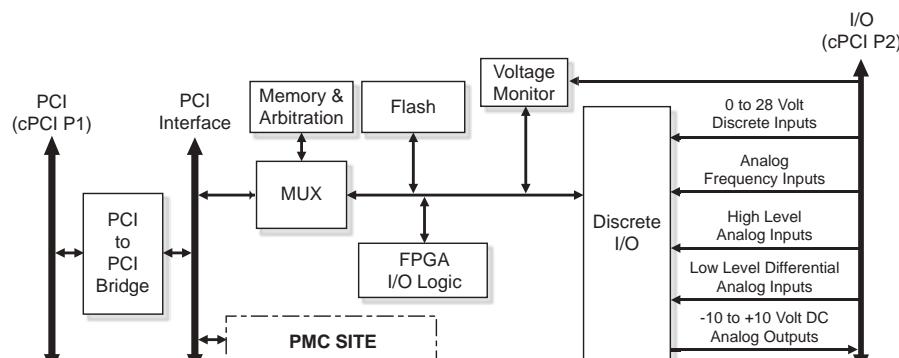
- DSP and FPGA configuration data stored in Flash memory



DIO3-cPCI-CC provides a highly versatile interface between the cPCI bus and DSP-Based inputs and outputs. Typical signal handling capabilities include Discrete Ground/Open outputs, Analog inputs, Gear Sensor inputs, and TTL level inputs and outputs. For added versatility, the card also includes a PCI Mezzanine Card Interface (PMC site). The ability to handle a wide variety of signals, perform on-the-fly signal processing, together with its conduction cooled temperature range makes the DIO3-cPCI-CC ideal for use in mission computers and other applications with harsh environmental demands.

DSP program code and FPGA configuration data can be downloaded and stored in FLASH memory via the host processor of the cPCI bus, allowing the card to combine the functionality of several individual speciality cards, saving precious backplane slots and the additional power, weight, and cooling requirements associated with those extra slots.

Signals move between the P1 connector on the PCI data bus, and external devices on the P2 connector, via a series of interfaces including a PCI-to-PCI Bridge, PCI interface, MUX, and a DSP core.



Simplified Block Diagram of DIO3-cPCI-CC Card

The module receives input power from the power supply via the cPCI bus. Secondary voltages of +5 V and +28 V are standard, and optional voltage of +3.3 V supplied either from the backplane or generated onboard, is available. Discrete output interfaces include bi-level optically coupled and bi-level and general purpose digital outputs. The DIO3 provides an excitation voltage output interface and includes an ADC for BIT monitoring of power supply secondary voltages.



DIO3-cPCI-CC

Configurations

Specifications

Form Factor

- 3U cPCI

Designed in Accordance with IEEE 1101.2 and VITA 30.1

Electrical Interfaces

- 32 Discrete Inputs 0 to 28 Volt
- 4 Analog Frequency Inputs
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DIO I/O and Control Functions - J1 Data Bus

- 32 Bit cPCI

DIO I/O and Control Functions - J2 I/O

- Input and output flexibility provided via software programmability and configurable biasing circuitry

Model Number	Configuration
DIO3-cPCI-CCAR0	cPCI to DIO, Conduction Cooled

Input Power

- 5 VDC and 28 VDC standard
- 3.3 VDC optional on backplane, or onboard

MTBF

- >70,000 hours

I/O Connectors

- Per IEC 61076-4-101

Conformal Coating

Quality Assurance

- Designed and tested to ISO-9001 certified procedures

Built-in Test Capability

- BIT monitoring for failure detection

Power Requirements

- +5 Volts \pm 5% at 0.2 A maximum
- +3.3 Volts \pm 5% at 0.4 A maximum

Temperature

- Operating: -40° to 85° C
- Storage: -55° to +95° C

Humidity

- 5% to 95%, non-condensing

Weight

- Approximately 0.159 kg (0.35 lb.)

Dimensions

- 3U Euroboard, 100.0 mm x 160.0 mm

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DIO3-cPCI-CC

DSP-Based Input/Output Module

Features

3U cPCI Conduction Cooled

PMC Mezzanine

- Supports a conduction cooled PMC module
- 32-bit 33 MHz

Inputs/Outputs

- 32 0 to 28 Volt Discrete Inputs
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Voltage Monitor

- 8-Channel, 10-Bit ADC for monitoring power supply secondary voltages

cPCI Interface

- Conforms to PICMG 2.0 R2.1 for a Target board

Memory Area

- 128 k Words of SRAM and
256 k Words of Flash memory

Versatile Microprocessor

- Texas Instruments TMS5402
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Software Programming

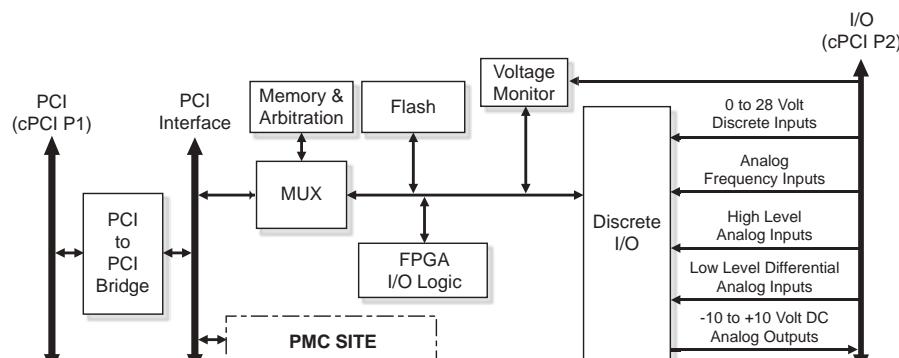
- DSP and FPGA configuration data stored in Flash memory



DIO3-cPCI-CC provides a highly versatile interface between the cPCI bus and DSP-Based inputs and outputs. Typical signal handling capabilities include Discrete Ground/Open outputs, Analog inputs, Gear Sensor inputs, and TTL level inputs and outputs. For added versatility, the card also includes a PCI Mezzanine Card Interface (PMC site). The ability to handle a wide variety of signals, perform on-the-fly signal processing, together with its conduction cooled temperature range makes the DIO3-cPCI-CC ideal for use in mission computers and other applications with harsh environmental demands.

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Simplified Block Diagram of DIO3-cPCI-CC Card

The module receives input power from the power supply via the cPCI bus. Secondary voltages of +5 V and +28 V are standard, and optional voltage of +3.3 V supplied either from the backplane or generated onboard, is available. Discrete output interfaces include bi-level optically coupled and bi-level and general purpose digital outputs. The DIO3 provides an excitation voltage output interface and includes an ADC for BIT monitoring of power supply secondary voltages.



DIO3-cPCI-CC

Configurations

Specifications

Form Factor

- 3U cPCI

**Designed in Accordance
with IEEE 1101.2 and VITA
30.1**

Electrical Interfaces

- 32 Discrete Inputs 0 to 28 Volt
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DIO I/O and Control Functions - J1 Data Bus

- 32 Bit cPCI

DIO I/O and Control Functions - J2 I/O

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Model Number	Configuration
DIO3-cPCI-CCAR0	cPCI to DIO, Conduction Cooled

Input Power

- 5 VDC and 28 VDC standard
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MTBF

- >70,000 hours

I/O Connectors

- Per IEC 61076-4-101

Conformal Coating

Quality Assurance

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Power Requirements

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- 3U Euroboard, 100.0 mm x 160.0 mm

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DIO3-cPCI-CC

DSP-Based Input/Output Module

Features

3U cPCI Conduction Cooled

PMC Mezzanine

- Supports a conduction cooled PMC module
- 32-bit 33 MHz

Inputs/Outputs

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- Altera 1K series FPGA with embedded IP PCI core for main processor communications

Voltage Monitor

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cPCI Interface

- Conforms to PICMG 2.0 R2.1 for a Target board

Memory Area

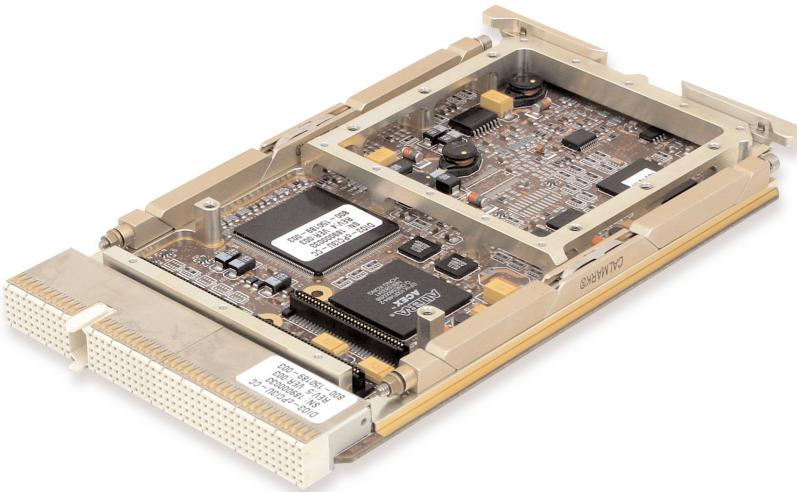
- 128 k Words of SRAM and 256 k Words of Flash memory

Versatile Microprocessor

- Texas Instruments TMS5402
- Microcode-based design for flexible support of unique protocols

Software Programming

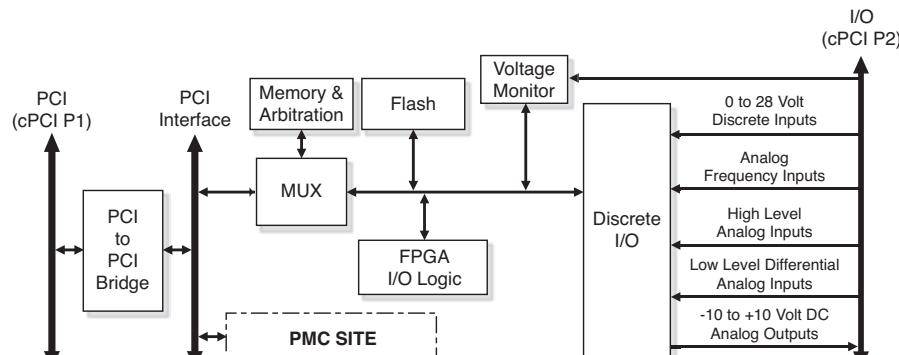
- DSP and FPGA configuration data stored in Flash memory



DIO3-cPCI-CC provides a highly versatile interface between the cPCI bus and DSP-Based inputs and outputs. Typical signal handling capabilities include Discrete Ground/Open outputs, Analog inputs, Gear Sensor inputs, and TTL level inputs and outputs. For added versatility, the card also includes a PCI Mezzanine Card Interface (PMC site). The ability to handle a wide variety of signals, perform on-the-fly signal processing, together with its conduction cooled temperature range makes the DIO3-cPCI-CC ideal for use in mission computers and other applications with harsh environmental demands.

DSP program code and FPGA configuration data can be downloaded and stored in FLASH memory via the host processor of the cPCI bus, allowing the card to combine the functionality of several individual speciality cards, saving precious backplane slots and the additional power, weight, and cooling requirements associated with those extra slots.

Signals move between the P1 connector on the PCI data bus, and external devices on the P2 connector, via a series of interfaces including a PCI-to-PCI Bridge, PCI interface, MUX, and a DSP core.



Simplified Block Diagram of DIO3-cPCI-CC Card

The module receives input power from the power supply via the cPCI bus. Secondary voltages of +5 V and +28 V are standard, and optional voltage of +3.3 V supplied either from the backplane or generated onboard, is available. Discrete output interfaces include bi-level optically coupled and bi-level and general purpose digital outputs. The DIO3 provides an excitation voltage output interface and includes an ADC for BIT monitoring of power supply secondary voltages.

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Memory Area

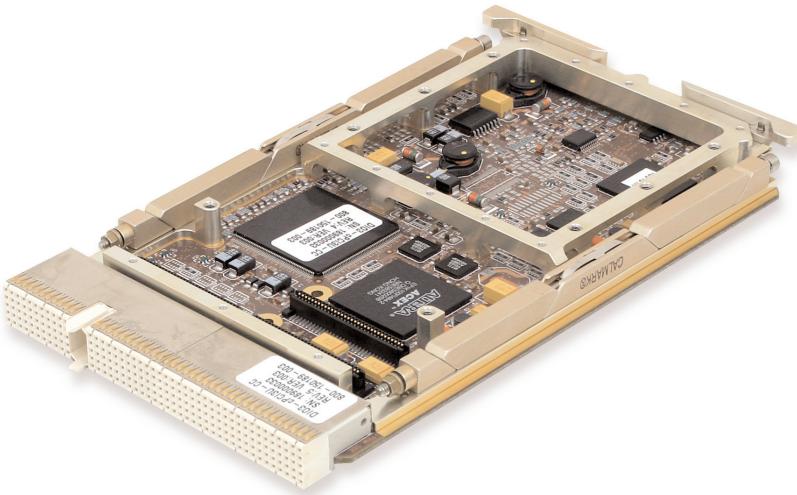
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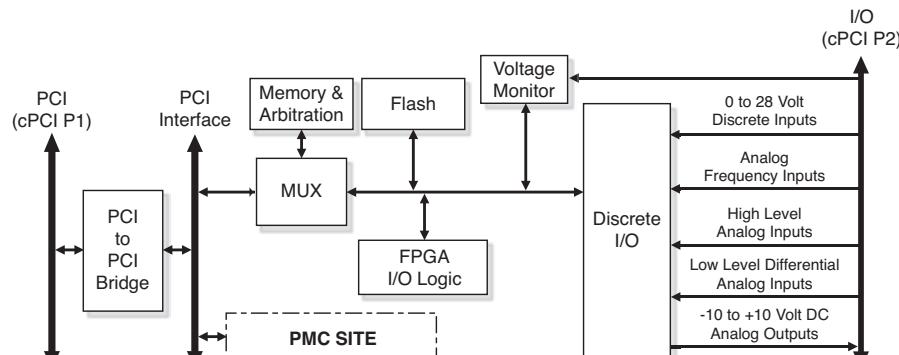
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